

STATE OF NEW HAMPSHIRE

**2014 305(b) Category  
4A, 4B, and 4C Impairments  
Not Included in the 2016 305(b) Report**

May 8, 2017



**STATE OF NEW HAMPSHIRE**

# **2014 305(b) Category 4A, 4B, and 4C Impairments Not Included in the 2016 305(b) Report**

**STATE OF NEW HAMPSHIRE  
DEPARTMENT OF ENVIRONMENTAL SERVICES  
29 HAZEN DRIVE  
CONCORD, N.H. 03301**

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**May 8, 2017**

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## Introduction

In accordance with Section 303(d) of the federal Clean Water Act, States must prepare a list of impaired waters that require a Total Maximum Daily Load study every two years (i.e., the 303(d) List). The last approved 303(d) List was prepared by the New Hampshire Department of Environmental Services (NHDES) in 2012. A final of the 2014 Section 303(d) List of impaired waters was submitted to the US Environmental Protection Agency (USEPA) on March 27, 2017. Downloadable copies of the past list as well as the draft 303(d) 2016 list are available on the NHDES website for review (<http://des.nh.gov/organization/divisions/water/wmb/swqa/index.htm>). This document provides a list of all surface waters and parameter combinations that were removed from categories 4A, 4B, or 4C impairments on the 2016 305(b) and the reasons why they were removed.

Assessment outcomes cover a spectrum from very good to very bad coded as an alpha numeric scale that provides additional distinctions in cases where an impairment exists. In each of the new impairments detailed within this document the 2014 and 2016 assessment status is highlighted applying the categories in the table below.

		<b>Severe</b>	<b>Poor</b>	<b>Likely Bad</b>	<b>No Data</b>	<b>Likely Good</b>	<b>Marginal</b>	<b>Good</b>
		Not Supporting, Severe	Not Supporting, Marginal	Insufficient Information – Potentially Not Supporting	No Data	Insufficient Information – Potentially Full Supporting	Full Support, Marginal	Full Support, Good
CATEGORY	Description							
*Category 2	Meets standards						2-M or 2-OBS	2-G
Category 3	Insufficient Information			3-PNS	3-ND	3-PAS		
Category 4	Does not Meet Standards;							
4A	TMDL Completed	4A-P	4A-M or 4A-T					
4B	Other enforceable measure will correct the issue.	4B-P	4B-M or 4B-T					
4C	Non-pollutant (i.e. exotic weeds)	4C-P	4C-M					
Category 5	TMDL Needed	5-P	5-M or 5-T					

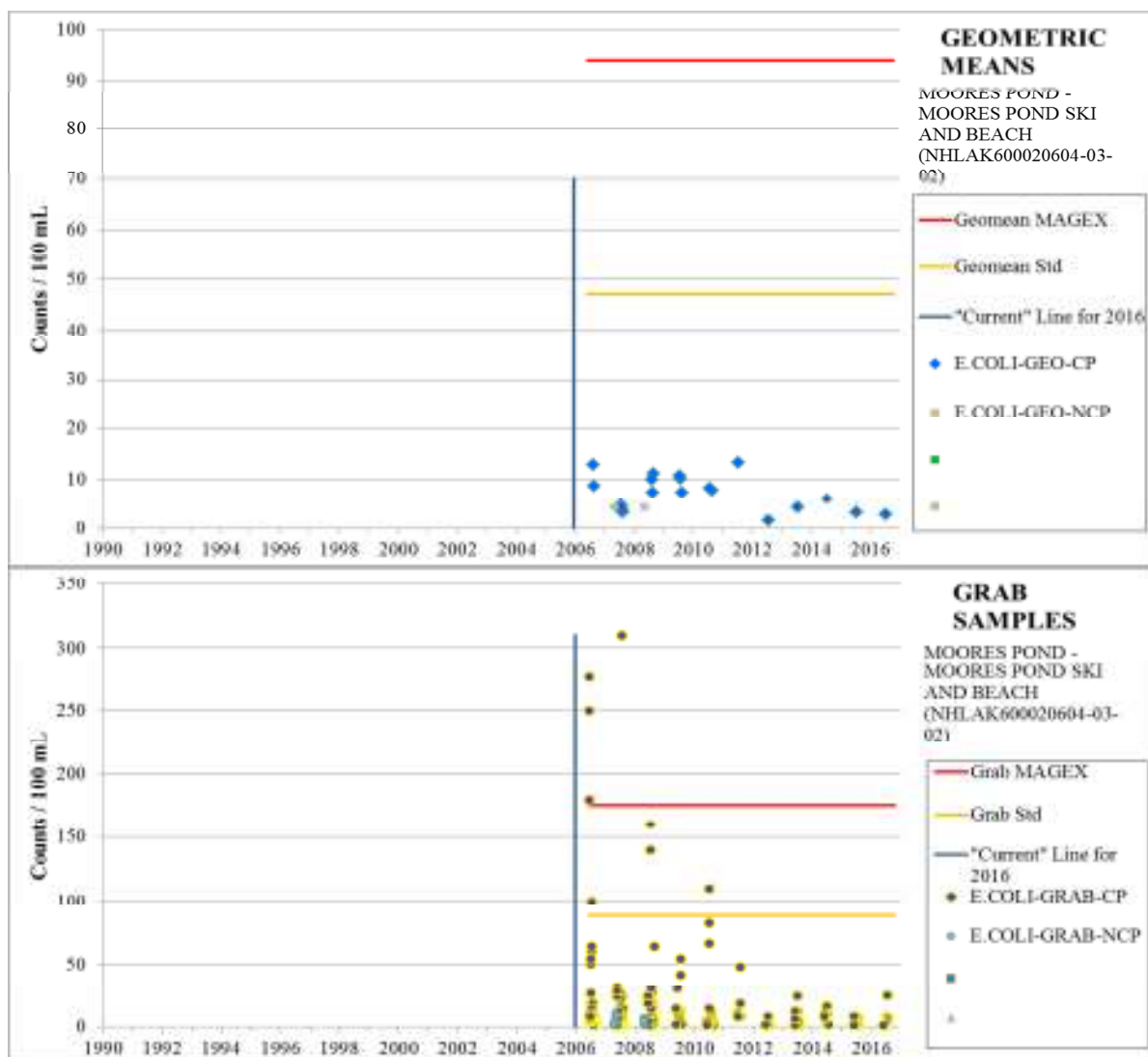
\* “Category 1” only exists at the Assessment Unit Level.

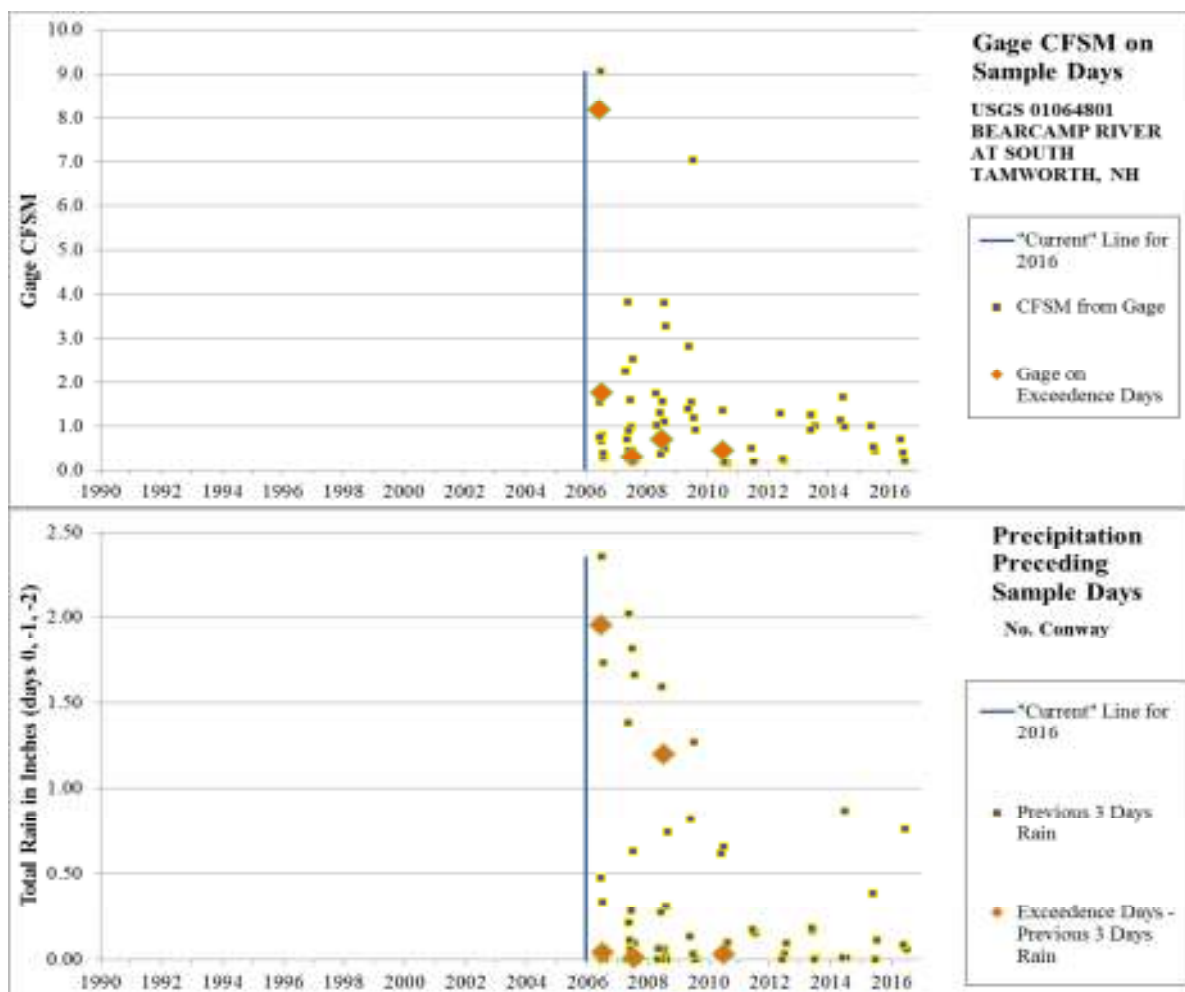
## Bacteria – Beaches

### MOORES POND - MOORES POND SKI AND BEACH (NHLAK600020604-03-02)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
MOORES POND - MOORES POND SKI AND BEACH	NHLAK600020604-03-02	<i>Escherichia coli</i>	Tamworth	4A-P	2-M

2016: The data show a steady decrease in *E. coli* since 2006, even when rainfall and gage were increasing. All geometric means were well below standards, though there were four grab samples above the MAGEX, three sampled on June 27, 2006, and one from 2007. The trend of bacteria detected from grab samples has been well below thresholds since 2011.





(flow and weather comparisons were done for two locations: Saco River and North Conway vs. Bearcamp River at Tamworth and Lakeport 2)

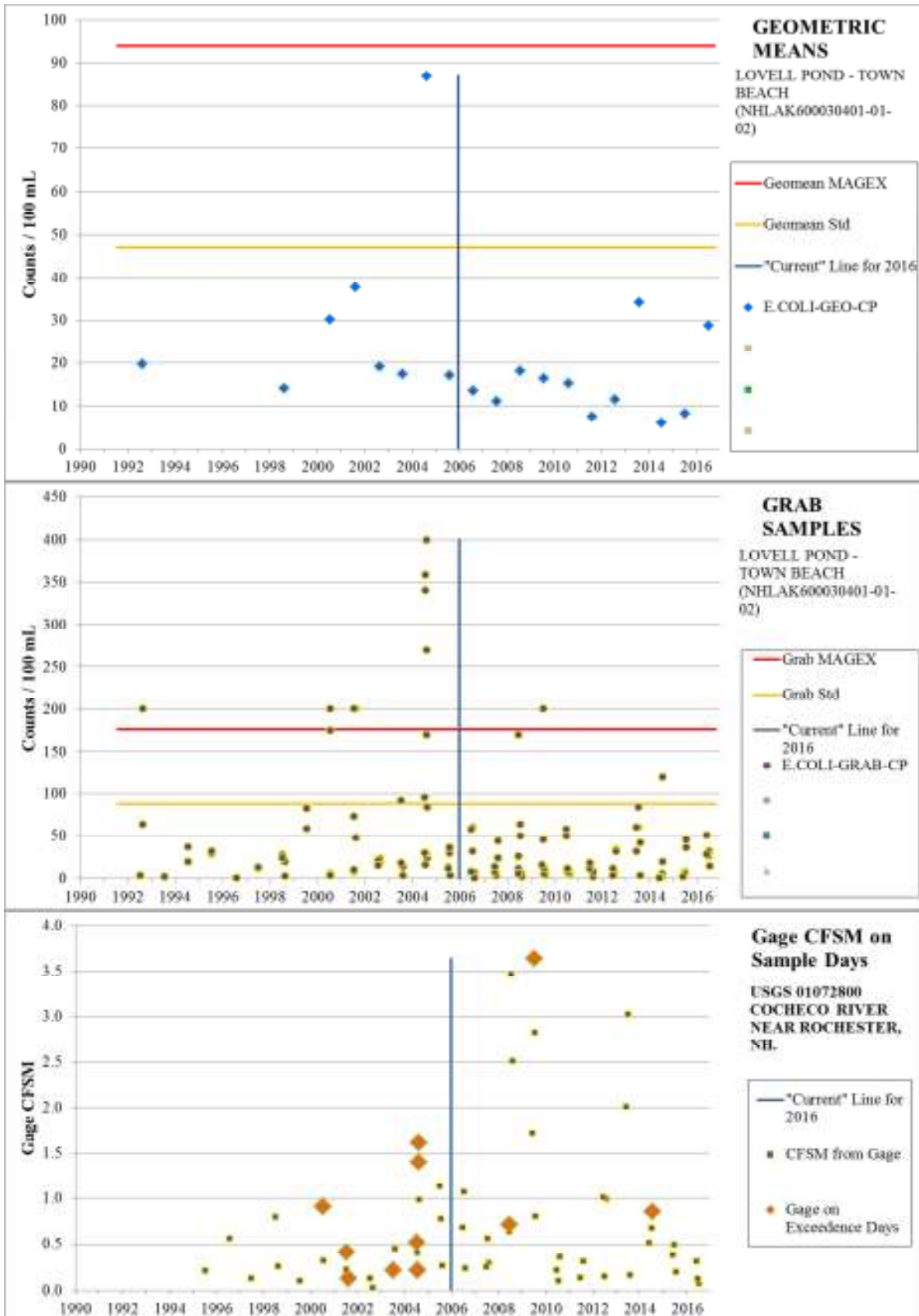
**Notes:**

- E. COLI-GEO-CP = *Escherchia coli* geometric mean calculated from samples collected during the summer critical period.
  - E. COLI -GEO-NCP = *Escherchia coli* geometric mean calculated from samples collected outside the summer critical period.
  - E. COLI -GRAB-CP = *Escherchia coli* grab samples collected during the summer critical period.
  - E. COLI -GRAB-NCP = *Escherchia coli* grab samples collected outside the summer critical period.
- "Current" Line for 2016 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current" unless. Available older data is provided for context. See the 2016 CALM for additional details.

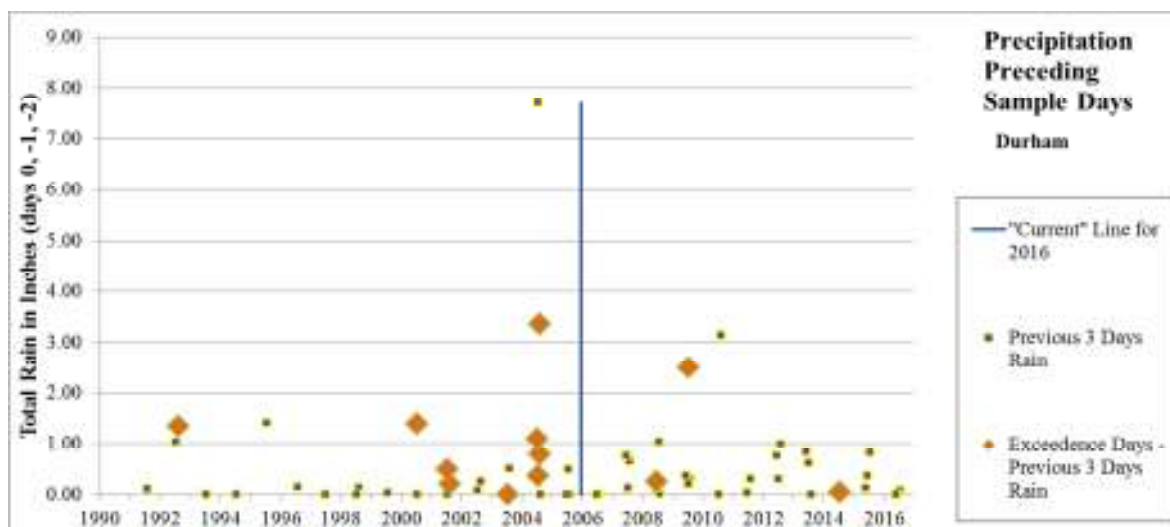
**LOVELL POND BEACH (NHLAK600030401-01-02)**

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
Lovell Pond Town Beach	NHLAK600030401-01-02	<i>Escherchia coli</i>	Wakefield	4A-M	2-M

2016: There have not been any geometric mean exceedences in the past 10 years for this assessment unit. Only two grab samples were above the criteria (occurring in 2008 and 2014) and one grab sample exceeded the MAGEX threshold (2009). Both the flow and preceding precipitation conditions were not especially elevated during these times. Further, those conditions have been repeated with minimal exceedences.







## Notes:

E. COLI-GEO-CP = *Escherchia coli* geometric mean calculated from samples collected during the summer critical period.

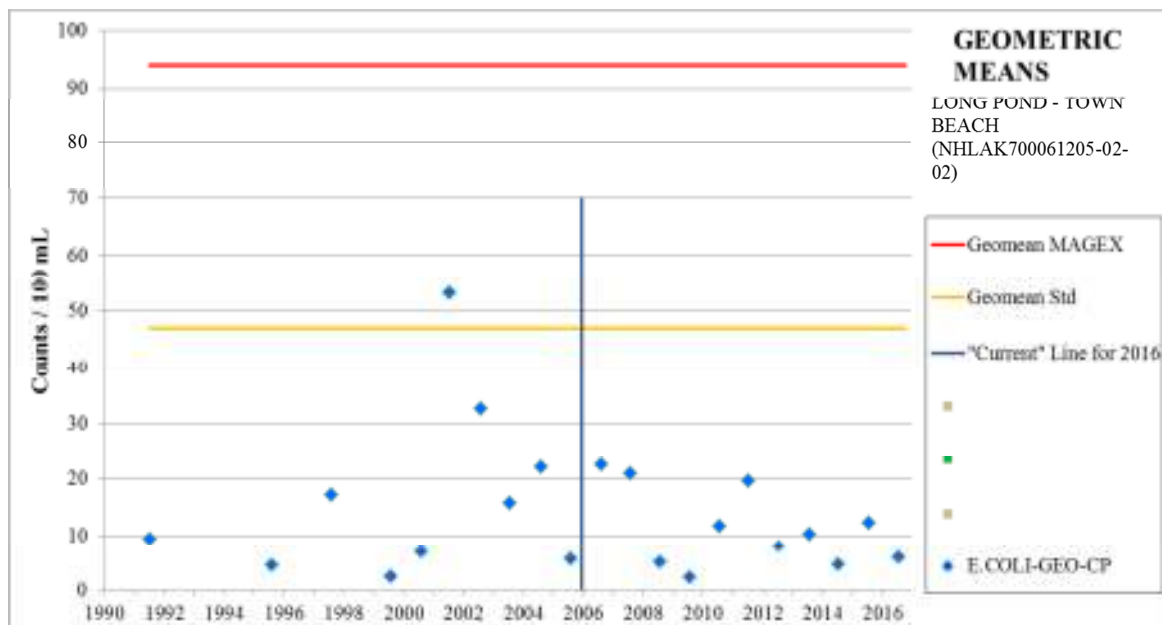
E. COLI-GRAB-CP = *Escherchia coli* grab samples collected during the summer critical period.

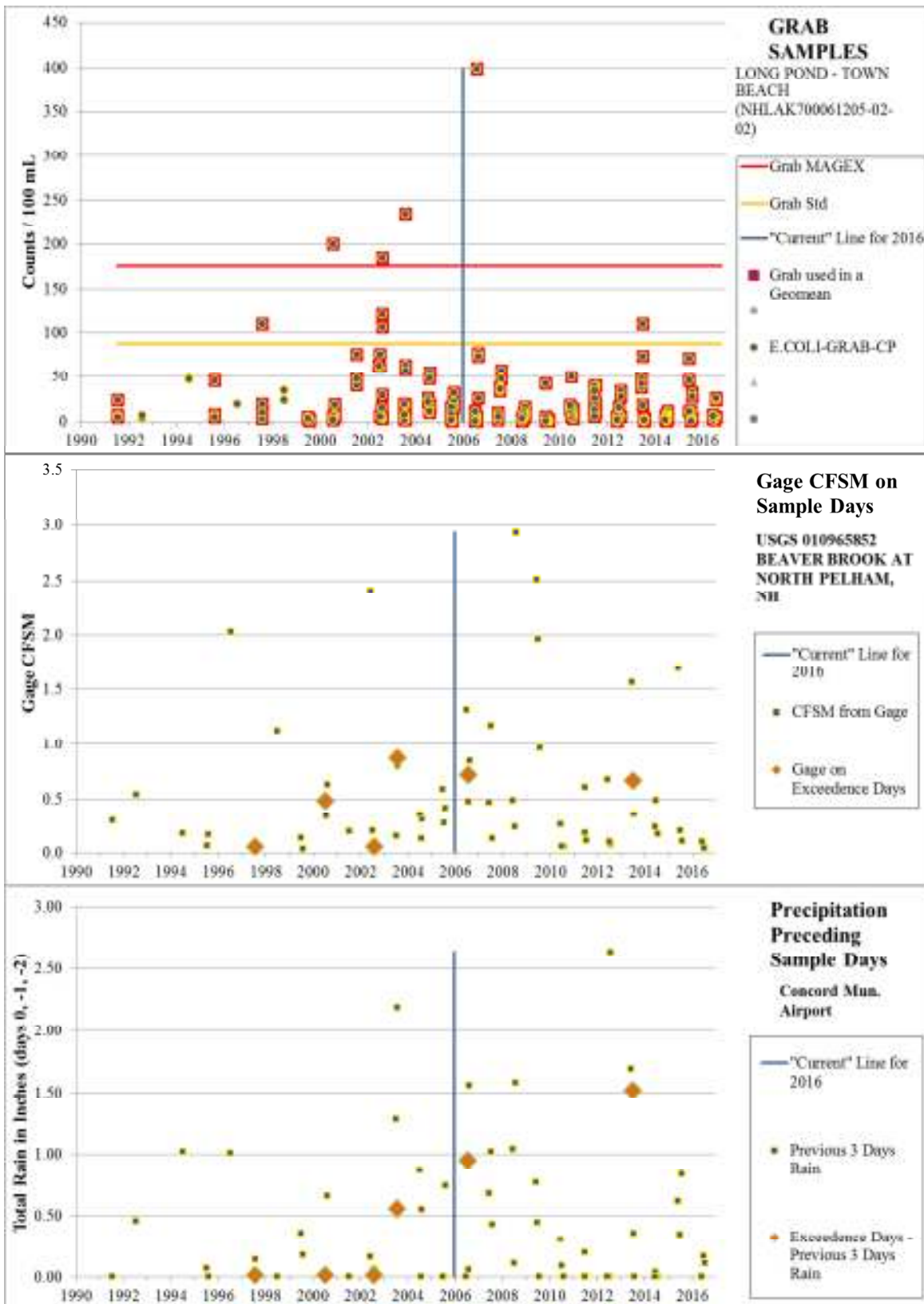
"Current" Line for 2016 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current" unless. Available older data is provided for context. See the 2016 CALM for additional details.

#### LONG POND - LONG POND TOWN BEACH (NHLAK700061205-02-02)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
LONG POND - TOWN BEACH	NHLAK700061205-02-02	Escherichia coli	Pelham	4A-P	2-M

2016: There were no geomean exceedences for bacteria since 2001. There were only two exceedences of the criteria from grab samples since 2006, one exceeded the MAGEX (8/4/2006) and one exceeded the state criteria (7/19/2013). Geomean data are consistent with, if not lower than, previous years. Precipitation and flow events in the Pelham area (coinciding with time of exceedences) were not especially noteworthy, though a slight increase in rainfall (1.5 inches recorded from Concord) was observed during the 2013 grab sample exceedence. There was not an increase in rainfall at the gages from Hudson/Pelham during this time.

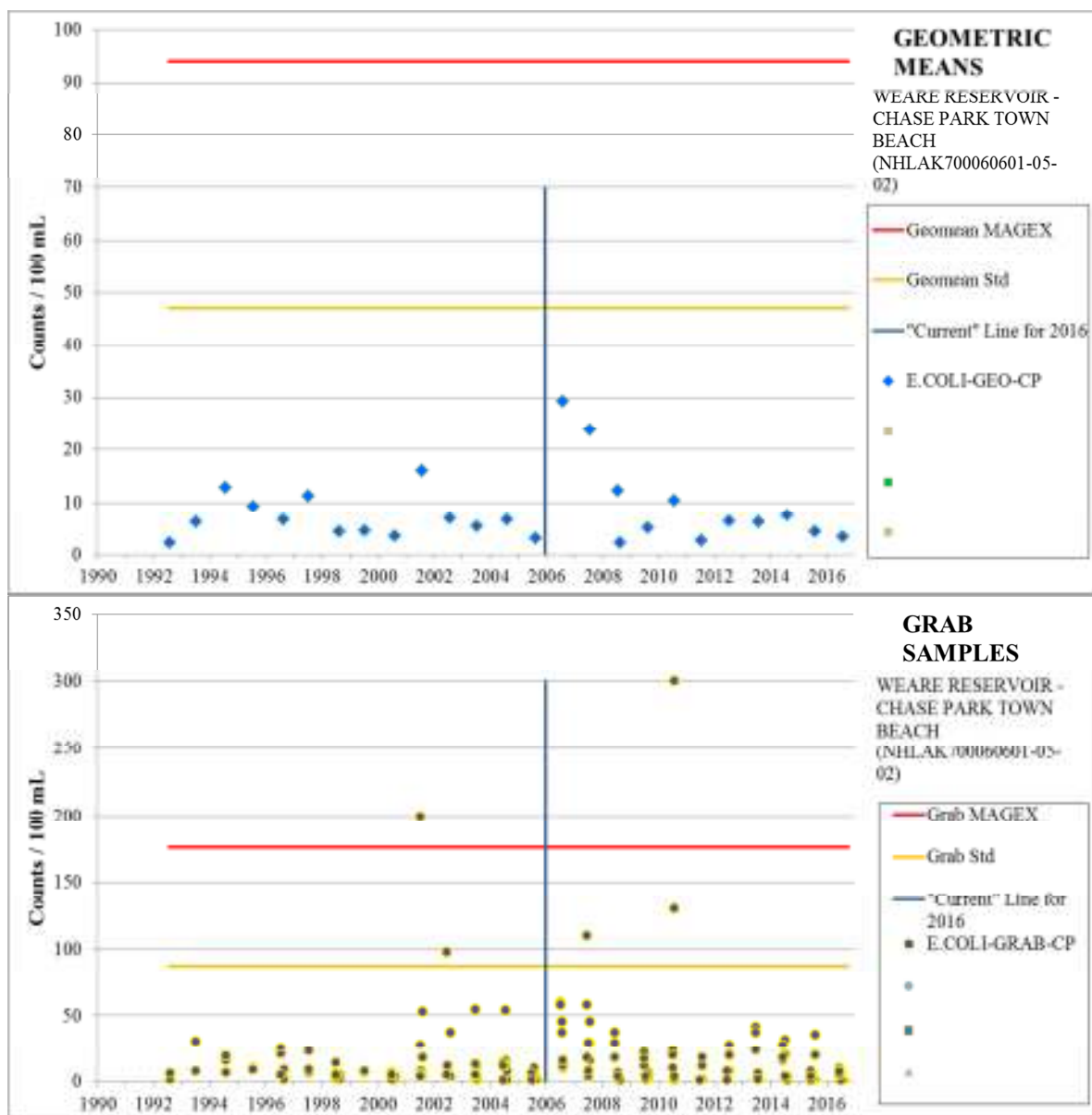


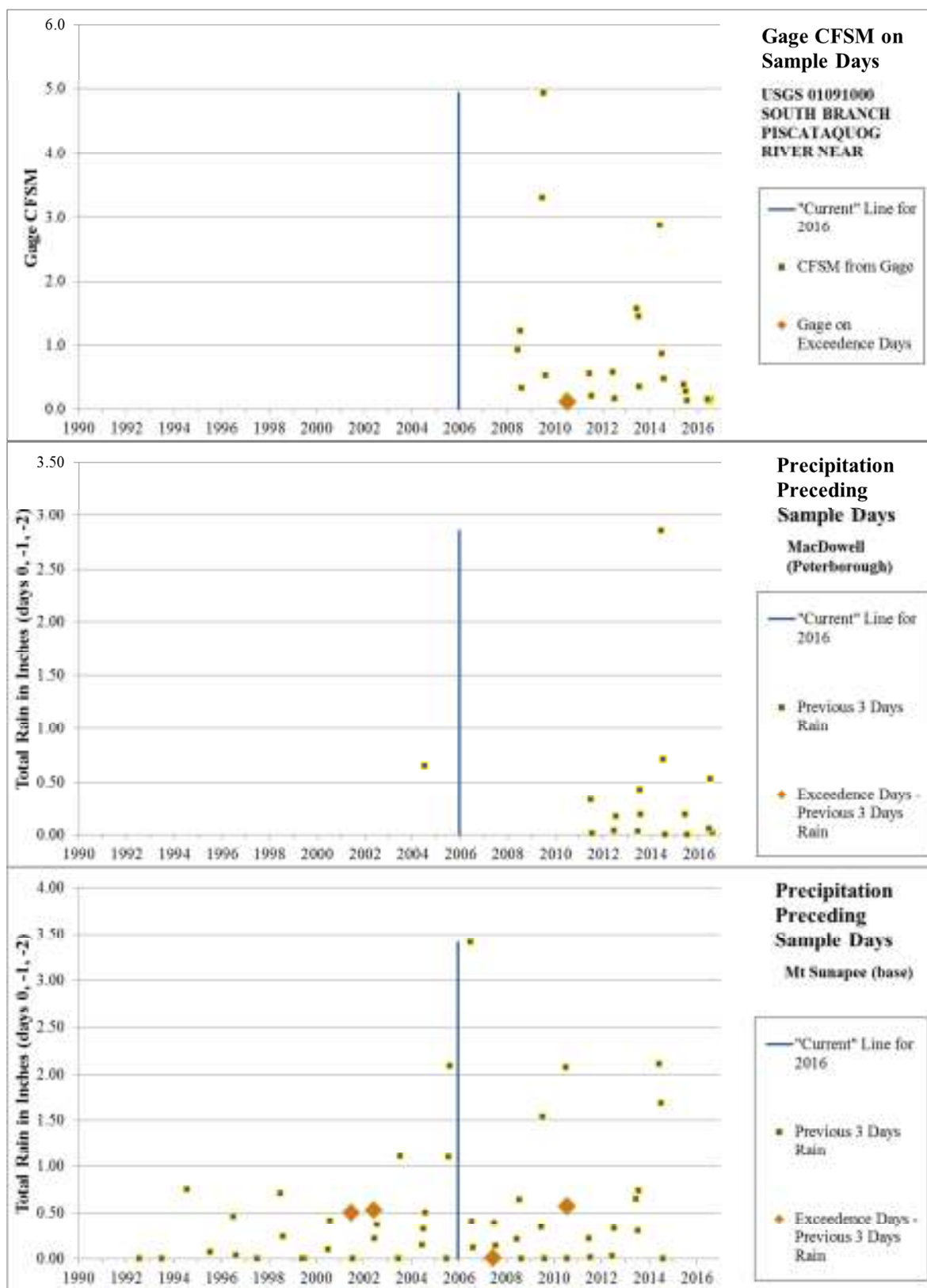


**WEARE RESERVOIR - CHASE PARK TOWN BEACH-HORACE LAKE (NHLAK700060601-05-02)**

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
WEARE RESERVOIR - CHASE PARK TOWN BEACH-HORACE LAKE	NHLAK700060601-05-02	<i>Escherichia coli</i>	Weare	4A-M	2-M

2016: There were no geometric mean exceedences for this assessment unit. Three grab samples exceed the criteria, occurring in 2007 and 2010 with one exceeding the MAGEX in 2010. Overall, only 3% of grab samples have exceeded the criteria and none in the last five years.





#### Notes:

E. COLI-GEO-CP = *Escherchia coli* geometric mean calculated from samples collected during the summer critical period.

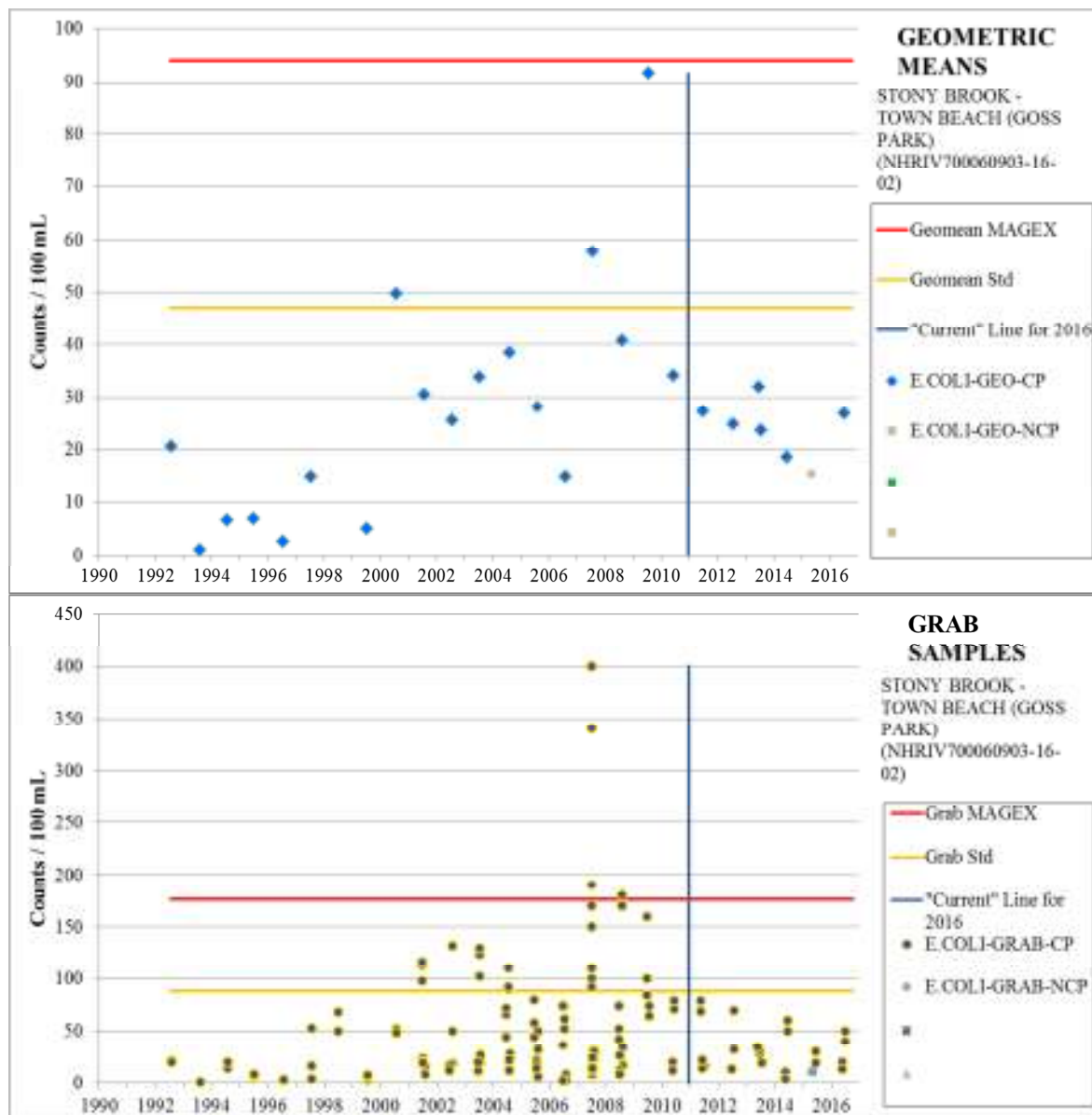
E. COLI -GRAB-CP = *Escherchia coli* grab samples collected during the summer critical period.

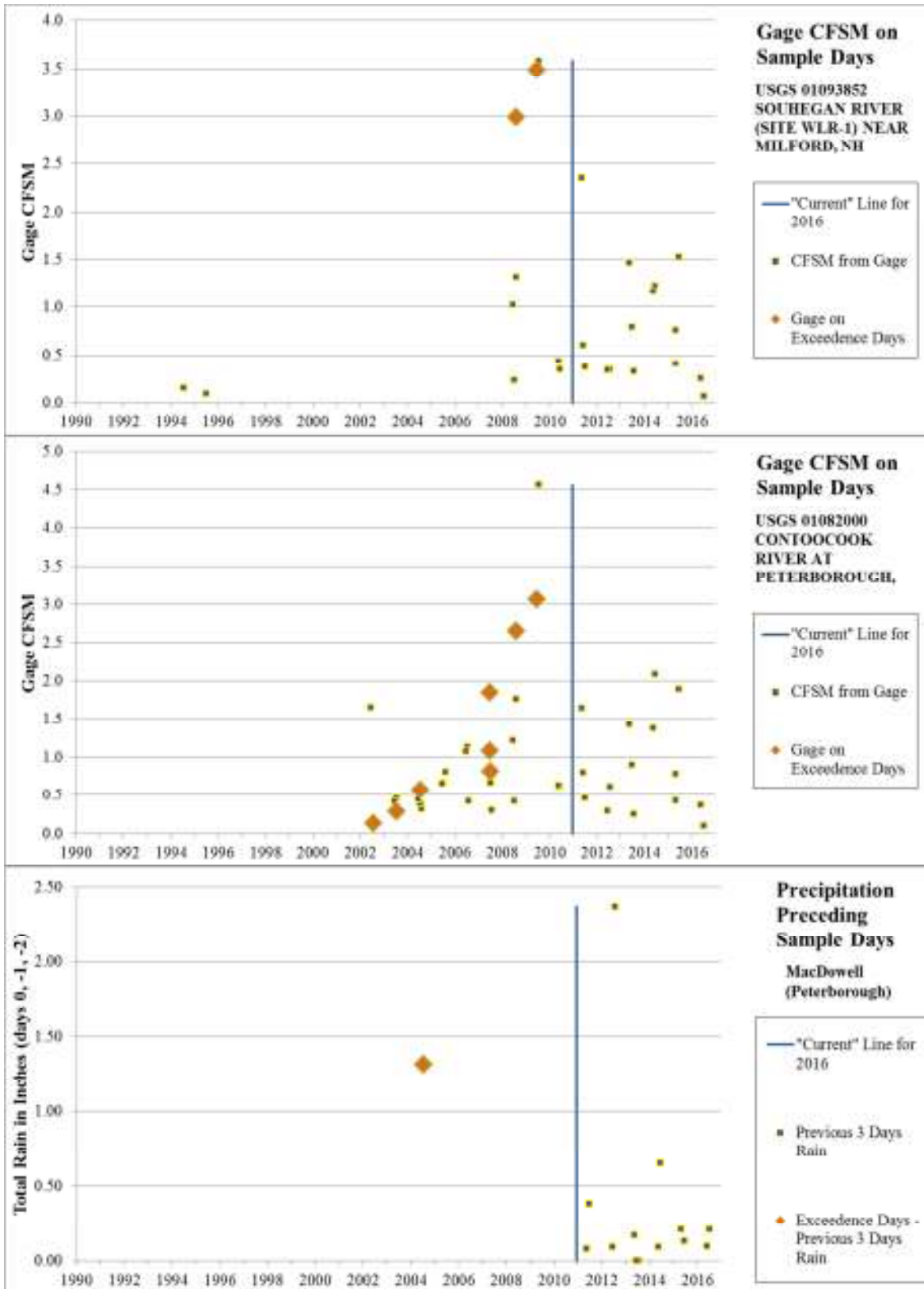
"Current" Line for 2016 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current" unless. Available older data is provided for context. See the 2016 CALM for additional details.

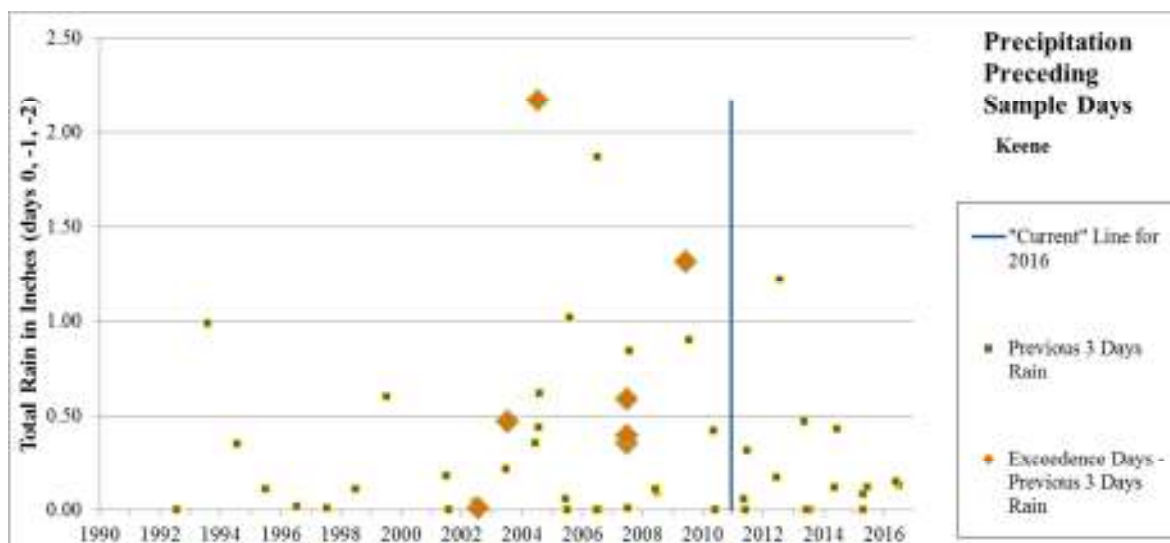
**STONY BROOK - TOWN BEACH (GOSS PARK) (NHRIV700060903-16-02)**

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
STONY BROOK - TOWN BEACH (GOSS PARK)	NHRIV700060903-16-02	<i>Escherichia coli</i>	Wilton	4A-M	2-M

2016: This assessment unit was listed as impaired in 2014 due to exceedences from 2009-2013. There have been no new geometric mean or grab sample exceedences in the last five years with bacteria concentrations continuing to decline.







## Notes:

E. COLI-GEO-CP = *Escherchia coli* geometric mean calculated from samples collected during the summer critical period.

E. COLI -GEO-NCP = *Escherchia coli* geometric mean calculated from samples collected outside the summer critical period.

E. COLI -GRAB-CP = *Escherchia coli* grab samples collected during the summer critical period.

E. COLI -GRAB-NCP = *Escherchia coli* grab samples collected outside the summer critical period.

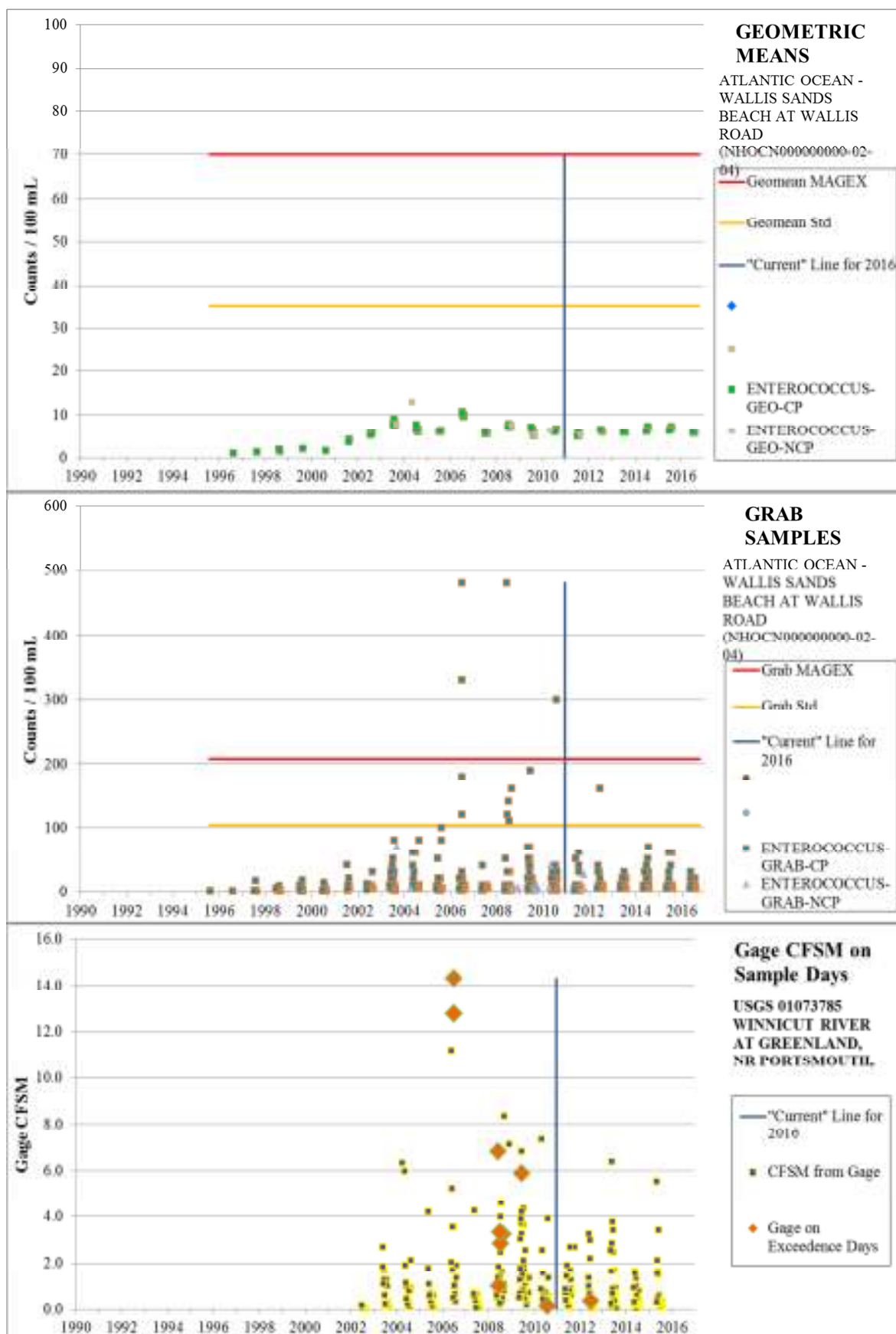
"Current" Line for 2016 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current" unless. Available older data is provided for context. See the 2016 CALM for additional details.

#### ATLANTIC OCEAN – WALLIS SANDS BEACH AT WALLIS ROAD (NHOCN000000000-02-04)

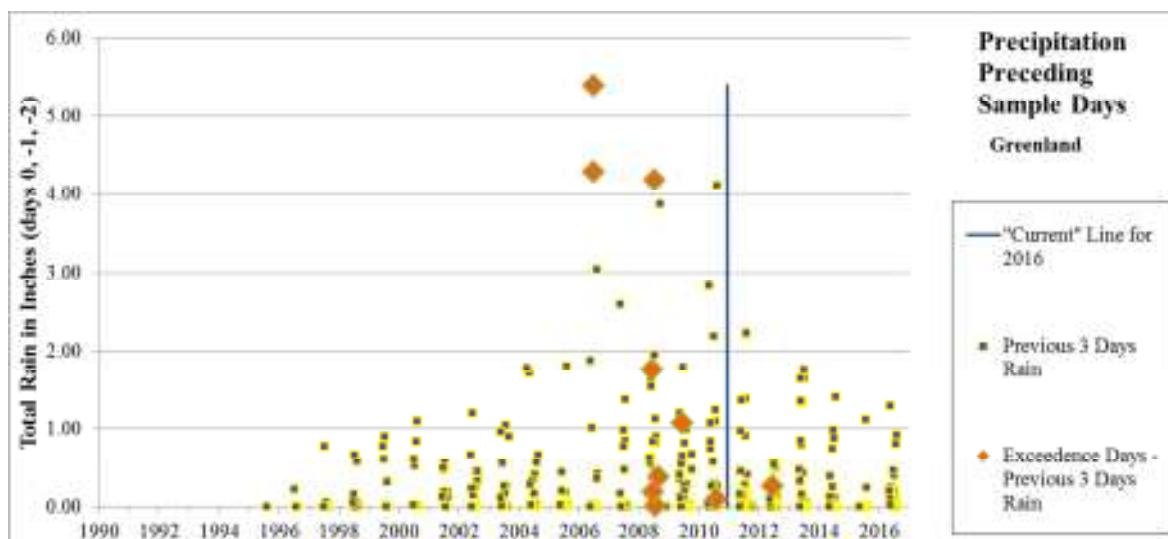
Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
ATLANTIC OCEAN – WALLIS SANDS BEACH AT WALLIS ROAD	NHOCN000000000-02-04	<i>Enterococcus</i>	Rye	4A-M	2-M

2016: There are no geometric mean exceedences for this assessment unit and *Enterococcus* bacteria levels from grab samples are well below criteria in recent years. Overall, there was only 1 of 457 (0.2%) grab samples in exceedence during the critical period.









## Notes:

ENTEROCOCCUS-GEO-CP = Enterococcus geometric mean calculated from samples collected during the summer critical period.

ENTEROCOCCUS-GEO-NCP = Enterococcus geometric mean calculated from samples collected outside the summer critical period.

ENTEROCOCCUS-GRAB-CP = Enterococcus grab samples collected during the summer critical period.

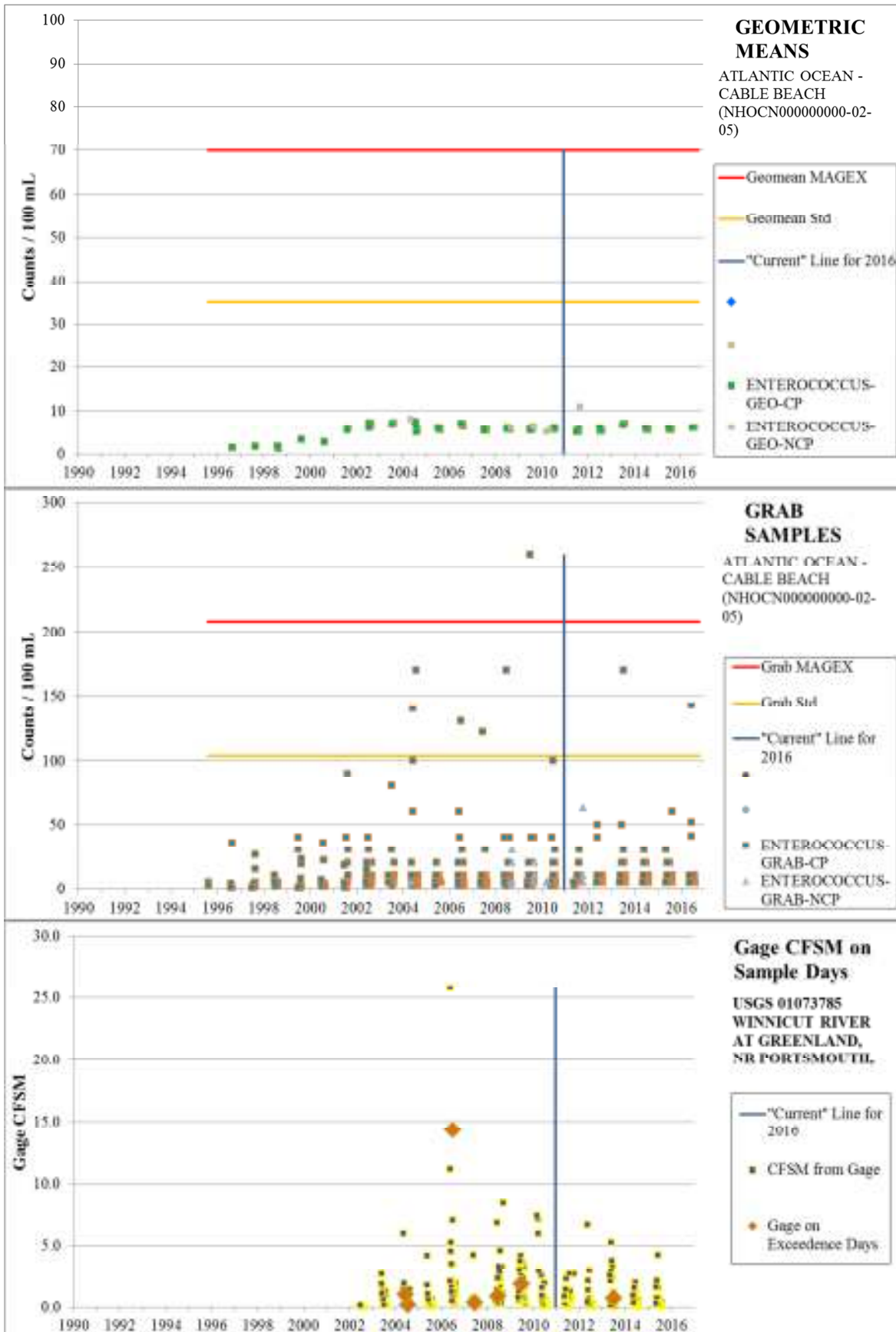
ENTEROCOCCUS-GRAB-NCP = Enterococcus grab samples collected outside the summer critical period.

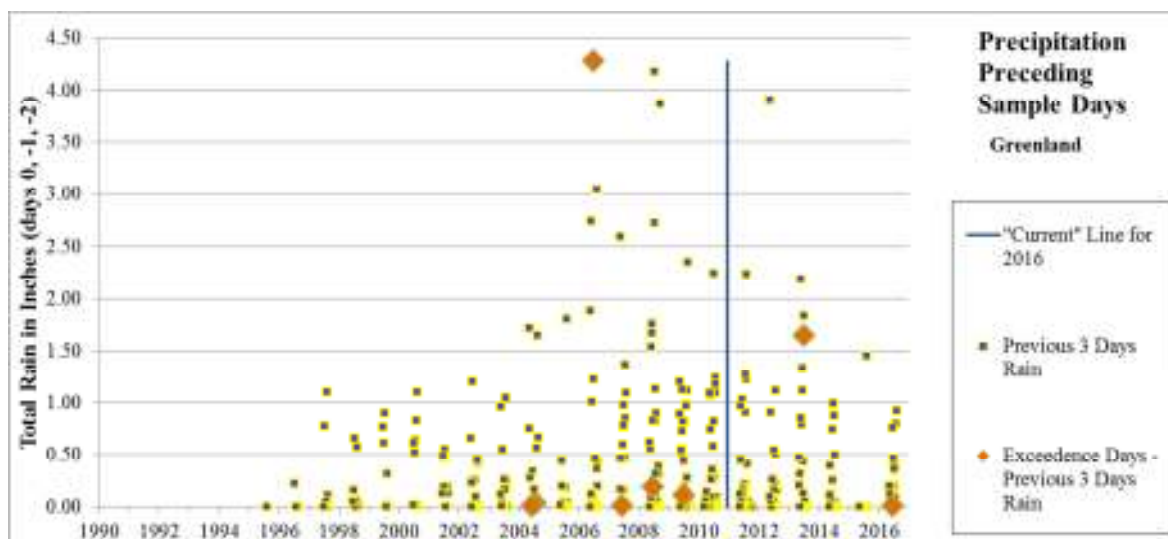
"Current" Line for 2014 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current" unless. Available older data is provided for context. See the 2014 CALM for additional details.

### ATLANTIC OCEAN –CABLE BEACH (NHOCN000000000-02-05)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
ATLANTIC OCEAN –CABLE BEACH	NHOCN000000000-02-05	<i>Enterococcus</i>	Rye	4A-M	2-M

2016: There are no geometric mean exceedences for this assessment unit and *Enterococcus* bacteria levels from most of the grab samples are below criteria in recent years with only two exceeding criteria in the last five years. Only two of 453 (0.4%) of the grab samples exceeded criteria during the critical period.\





## Notes:

ENTEROCOCCUS-GEO-CP = Enterococcus geometric mean calculated from samples collected during the summer critical period.

ENTEROCOCCUS-GEO-NCP = Enterococcus geometric mean calculated from samples collected outside the summer critical period.

ENTEROCOCCUS-GRAB-CP = Enterococcus grab samples collected during the summer critical period.

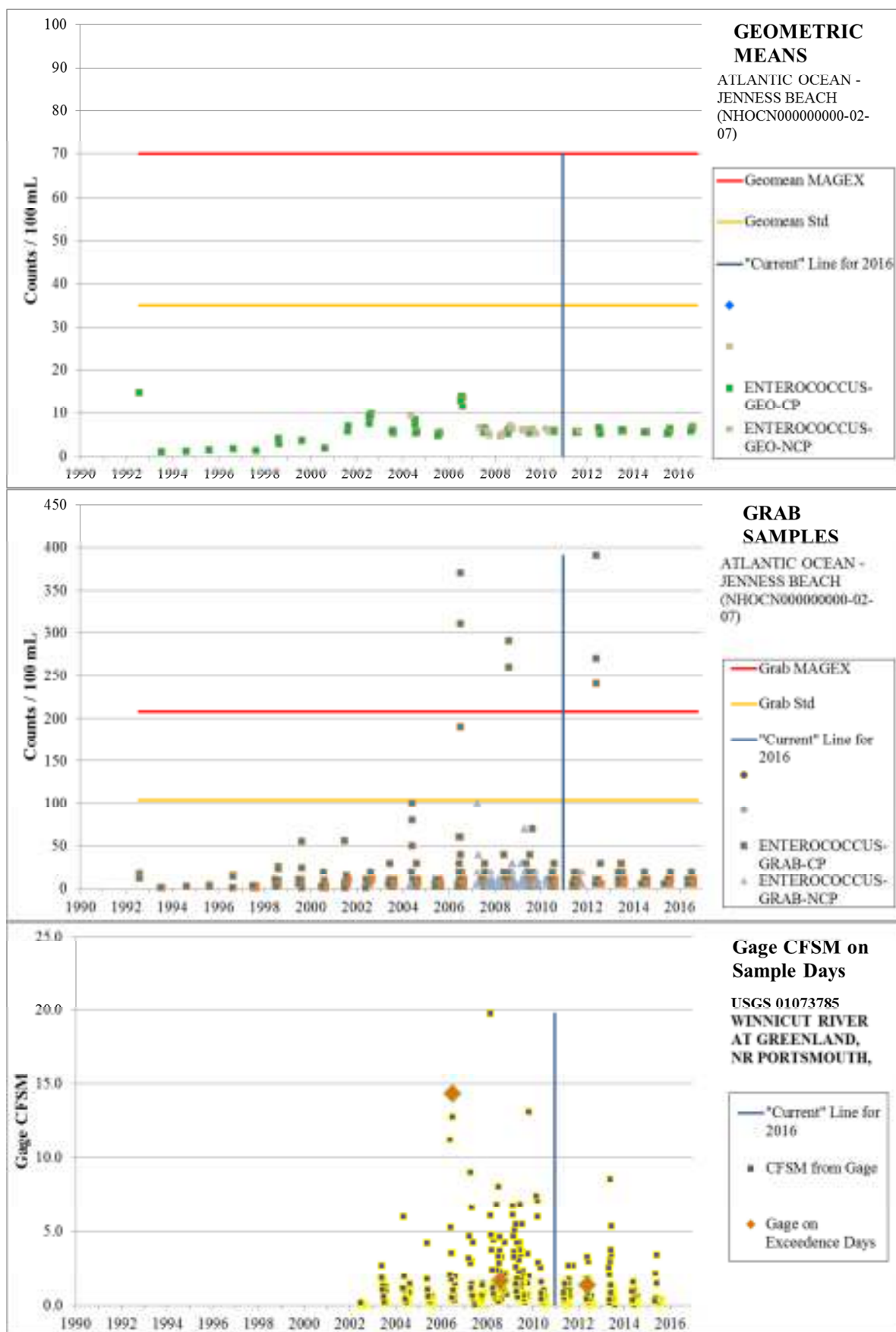
ENTEROCOCCUS-GRAB-NCP = Enterococcus grab samples collected outside the summer critical period.

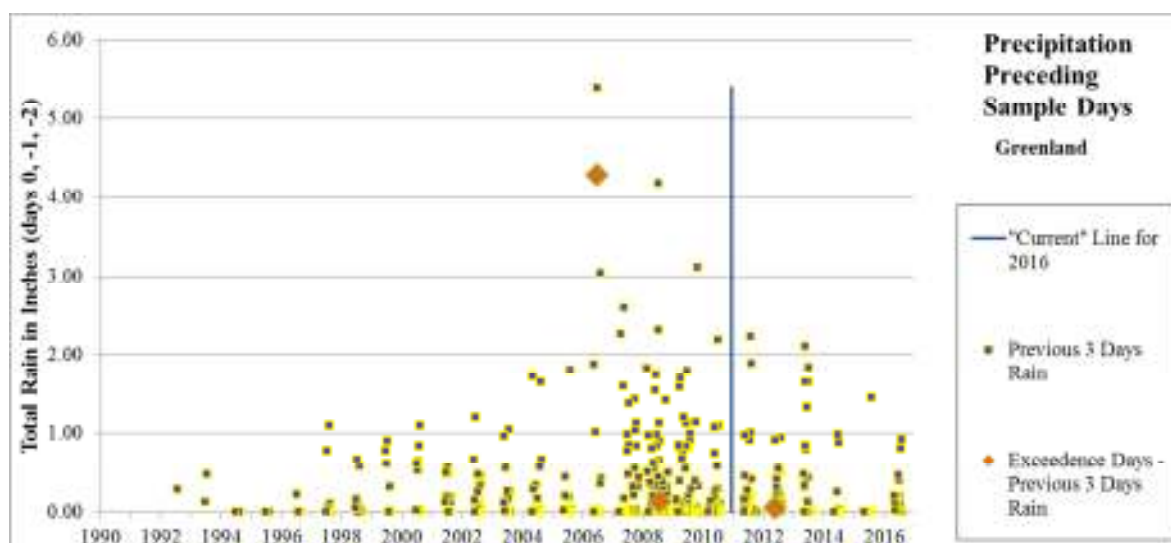
"Current" Line for 2014 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current" unless. Available older data is provided for context. See the 2014 CALM for additional details.

### ATLANTIC OCEAN - JENNESS BEACH (NHOCN000000000-02-07)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
ATLANTIC OCEAN - JENNESS BEACH	NHOCN000000000-02-07	<i>Enterococcus</i>	Rye	4A-M	2-M

2016: There are no geometric mean exceedences for this assessment unit and *Enterococcus* bacteria levels from grab samples are below criteria in recent years. In the last five years, three grab samples exceed MAGEX (all on June 11, 2012), but these did not result in an exceedence of the geometric mean. These results do not coincide with increased precipitation or flow events. Only three of 360 (0.8%) of the grab samples exceeded criteria during the critical period.





**Notes:**

ENTEROCOCCUS-GEO-CP = Enterococcus geometric mean calculated from samples collected during the summer critical period.

ENTEROCOCCUS-GEO-NCP = Enterococcus geometric mean calculated from samples collected outside the summer critical period.

ENTEROCOCCUS-GRAB-CP = Enterococcus grab samples collected during the summer critical period.

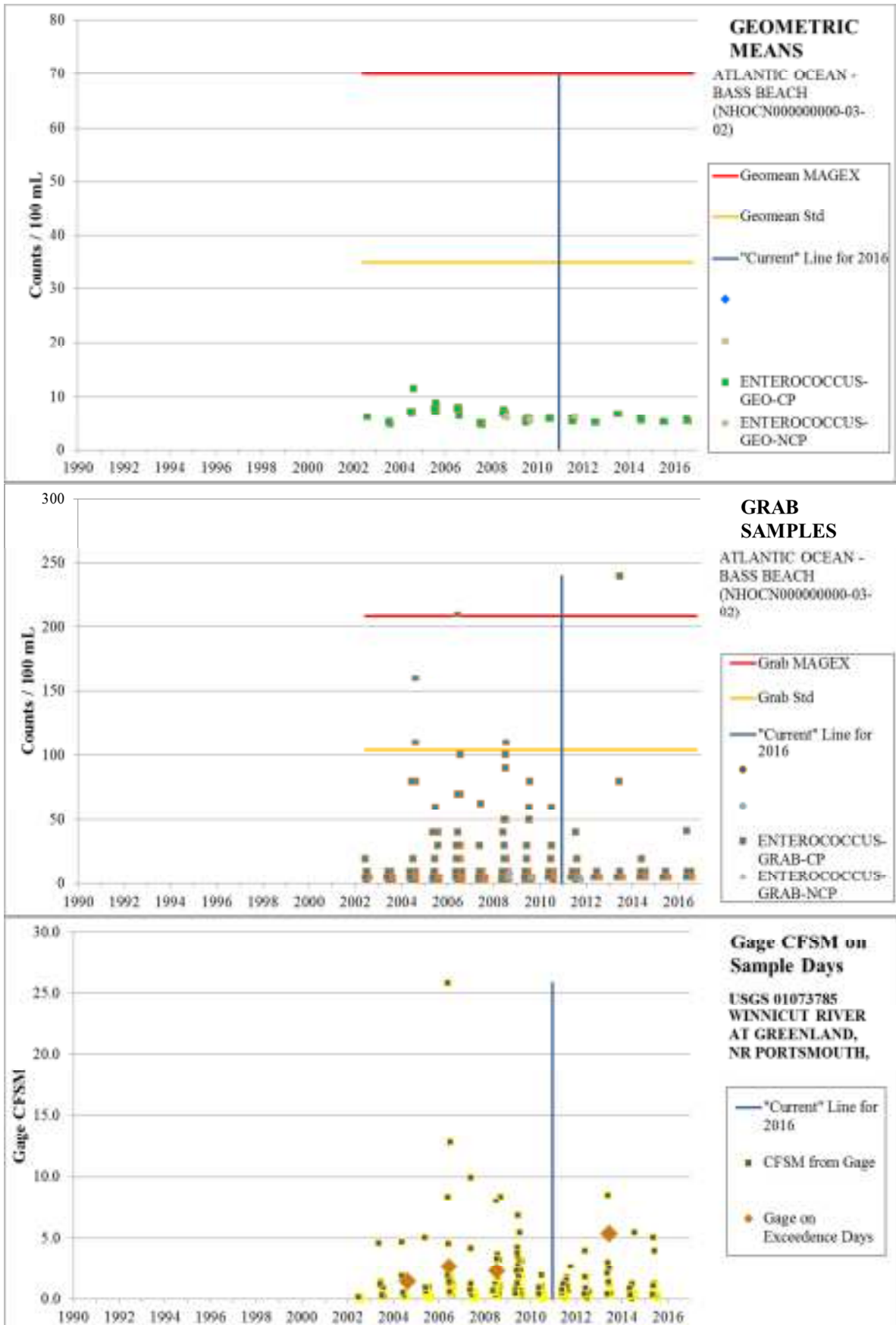
ENTEROCOCCUS-GRAB-NCP = Enterococcus grab samples collected outside the summer critical period.

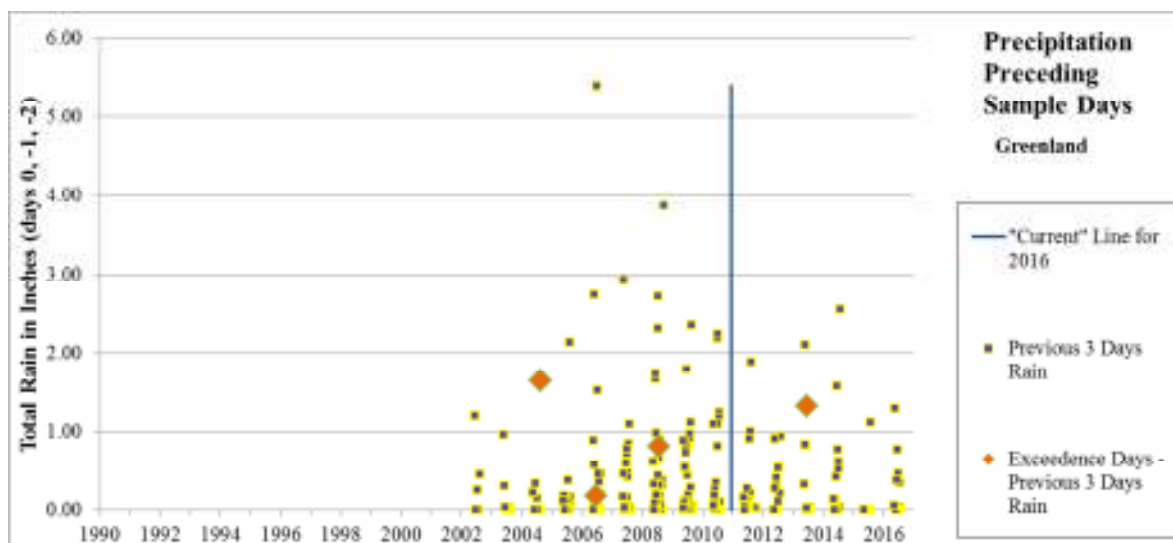
"Current" Line for 2014 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current" unless. Available older data is provided for context. See the 2014 CALM for additional details.

### ATLANTIC OCEAN - BASS BEACH (NHOCN000000000-03-02)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
ATLANTIC OCEAN - BASS BEACH	NHOCN000000000-03-02	<i>Enterococcus</i>	North Hampton	4A-M	2-M

2016: There are no geometric mean exceedences for this assessment unit and *Enterococcus* bacteria levels from grab samples are below criteria in recent years. In the last five years, one grab sample exceeds the MAGEX from 2013 when gage and precipitation were slightly elevated. Only two of 222 (1%) of the grab samples exceeded criteria during the critical period.





**Notes:**

ENTEROCOCCUS-GEO-CP = Enterococcus geometric mean calculated from samples collected during the summer critical period.

ENTEROCOCCUS-GEO-NCP = Enterococcus geometric mean calculated from samples collected outside the summer critical period.

ENTEROCOCCUS-GRAB-CP = Enterococcus grab samples collected during the summer critical period.

ENTEROCOCCUS-GRAB-NCP = Enterococcus grab samples collected outside the summer critical period.

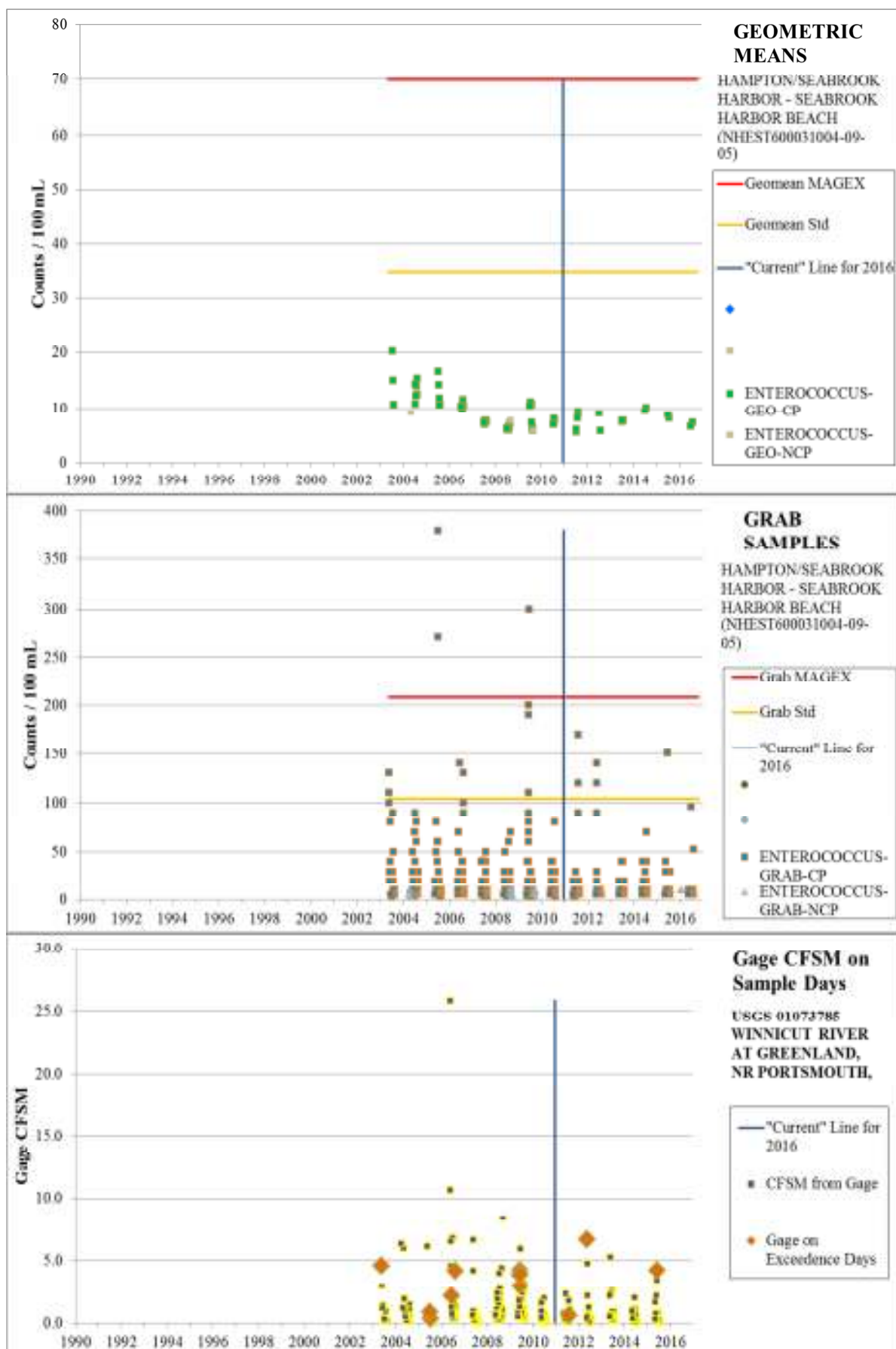
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### HAMPTON/SEABROOK HARBOR - SEABROOK HARBOR BEACH (NHEST600031004-09-05)

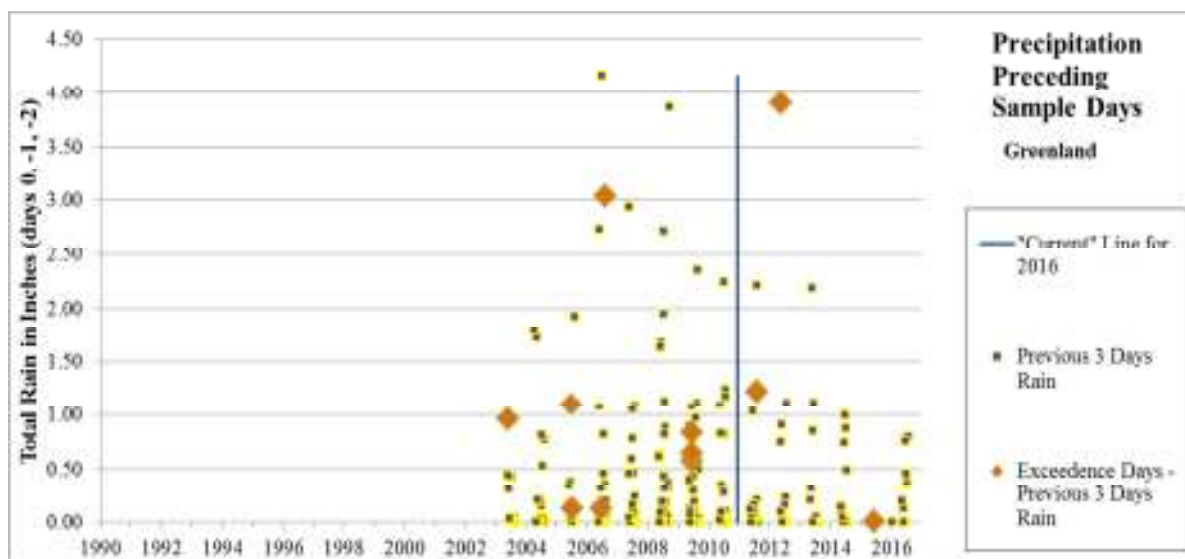
Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
HAMPTON/SEABROOK HARBOR - SEABROOK HARBOR BEACH	NHEST600031004-09-05	<i>Enterococcus</i>	Seabrook	4A-M	2-M

2016: There are no geometric mean exceedences of *Enterococcus* bacteria for this assessment unit. In the last five years, five grab samples exceed the MAGEX from 2011, 2012 and 2015. Increased bacteria levels coincide with increased precipitation events in 2011 and 2012. Only eight of 228 (3.5%) of the grab samples exceeded criteria during the critical period.









## Notes:

ENTEROCOCCUS-GEO-CP = Enterococcus geometric mean calculated from samples collected during the summer critical period.

ENTEROCOCCUS-GEO-NCP = Enterococcus geometric mean calculated from samples collected outside the summer critical period.

ENTEROCOCCUS-GRAB-CP = Enterococcus grab samples collected during the summer critical period.

ENTEROCOCCUS-GRAB-NCP = Enterococcus grab samples collected outside the summer critical period.

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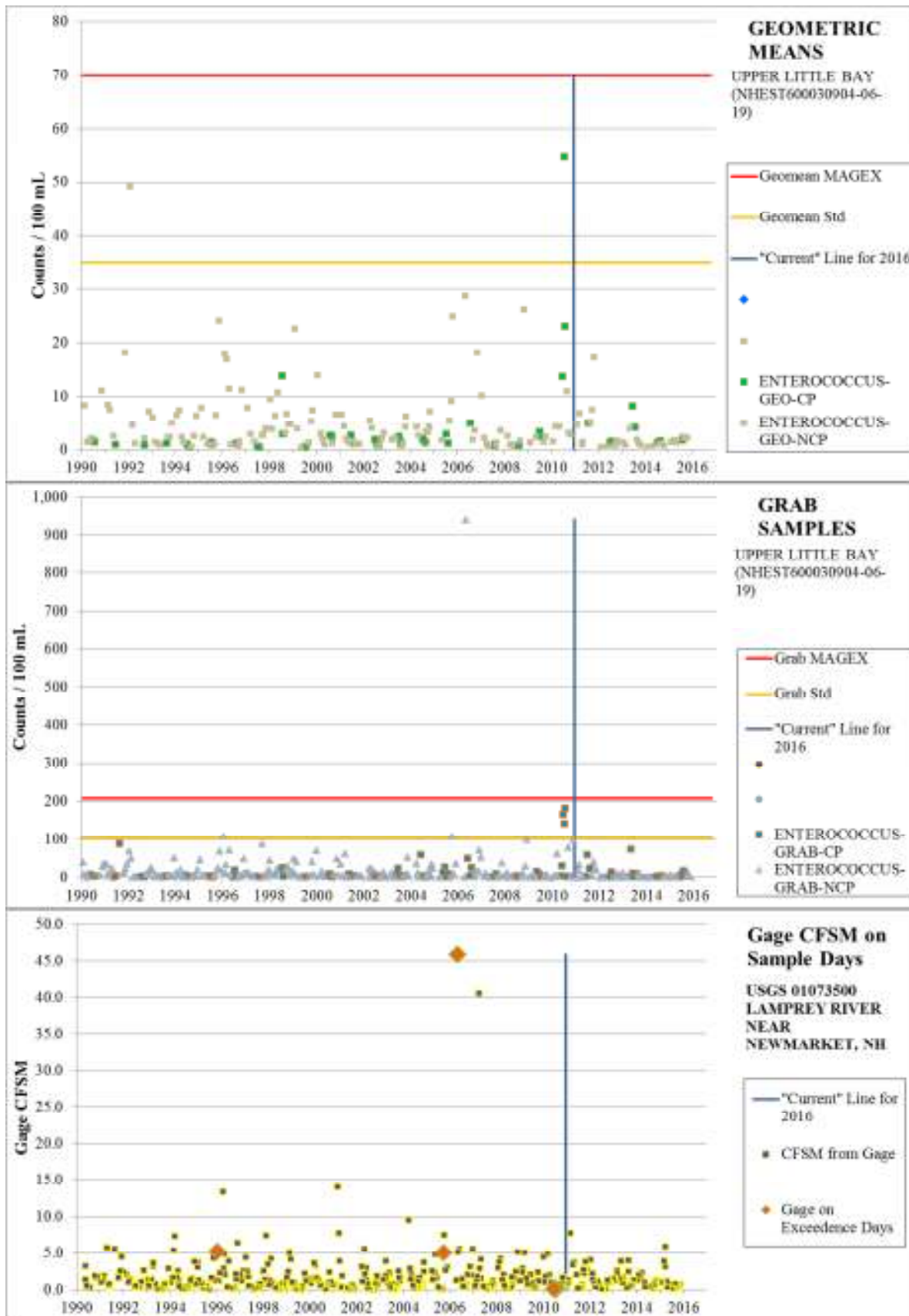
## Bacteria – Non-Beaches

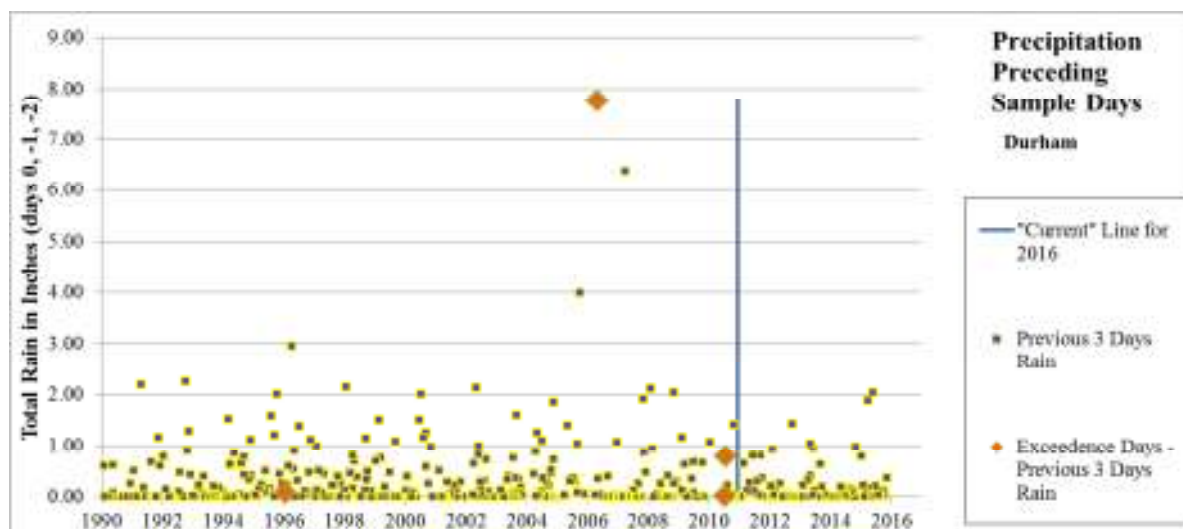
### UPPER LITTLE BAY (NHEST600030904-06-19)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
UPPER LITTLE BAY	NHEST600030904-06-19	<i>Enterococcus</i>	Newington	4A-P	2-G

Comment is for Primary and Secondary Contact recreation.

Since 2011, nine geometric means have been calculated in the Critical Period and none were above criteria. Since 2011, 20 single samples collected in the Critical Period and none above single sample maximum criteria (SSMC) or MAGEX. Since 2011, 29 geometric means have been calculated in the Non-Critical Period and none were above criteria. Since 2011, 40 single samples were collected in the Non-Critical Period and none above SSMC or MAGEX. Sampling considered current in the 2016 cycle completed at same site as previous cycles (GRBAP). Prior listing based on limited data above criteria. Data for current cycle collected across range of flow and precipitation conditions (stream flow gage 01073500; Durham weather station). Based on current data included in 2016 cycle assessment unit has been assessed as fully supporting (Category 2).





Notes:

ENTEROCOCCUS-GEO-CP = Enterococcus geometric mean calculated from samples collected during the summer critical period.

ENTEROCOCCUS-GEO-NCP = Enterococcus geometric mean calculated from samples collected outside the summer critical period.

ENTEROCOCCUS-GRAB-CP = Enterococcus grab samples collected during the summer critical period.

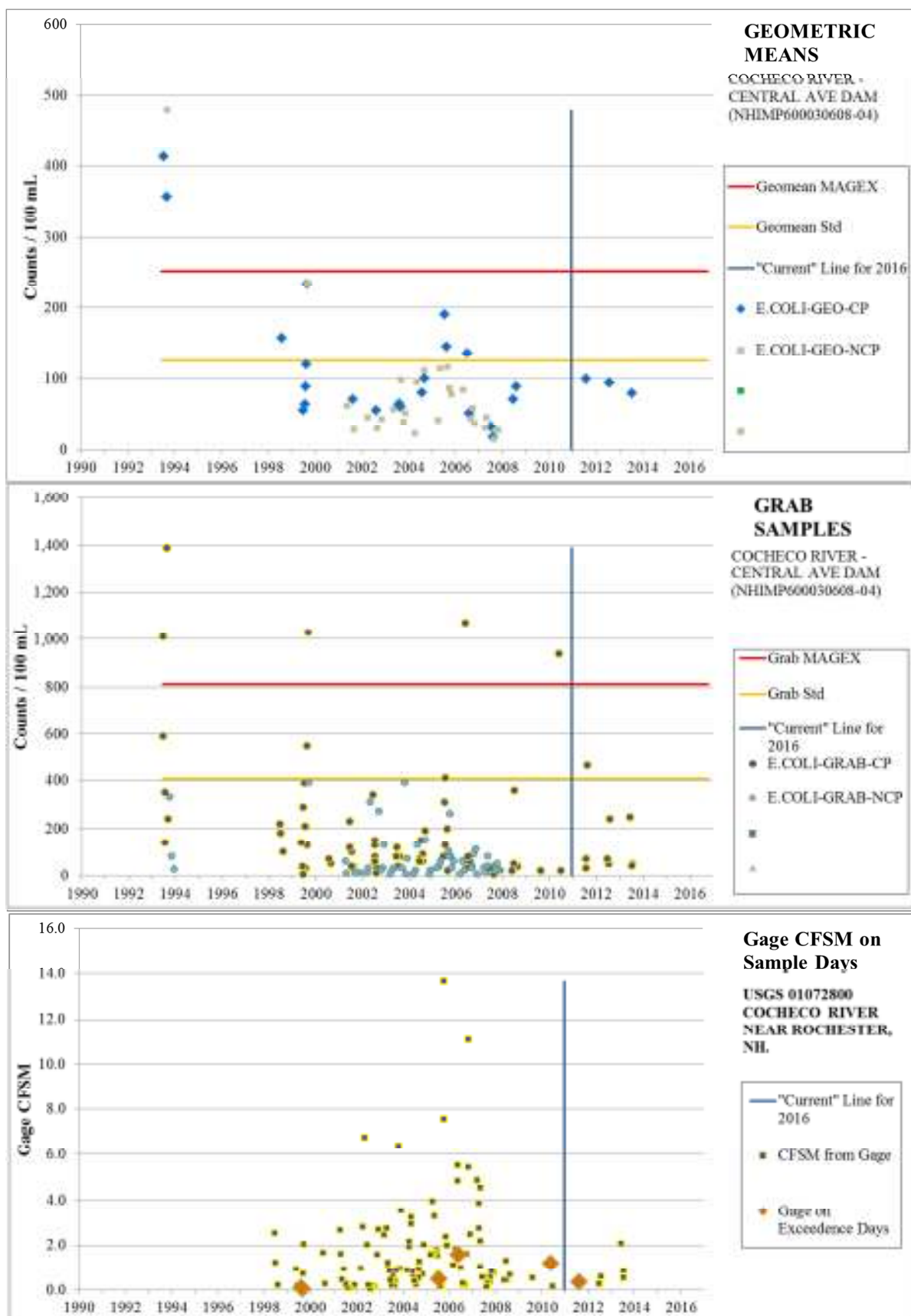
ENTEROCOCCUS-GRAB-NCP = Enterococcus grab samples collected outside the summer critical period.

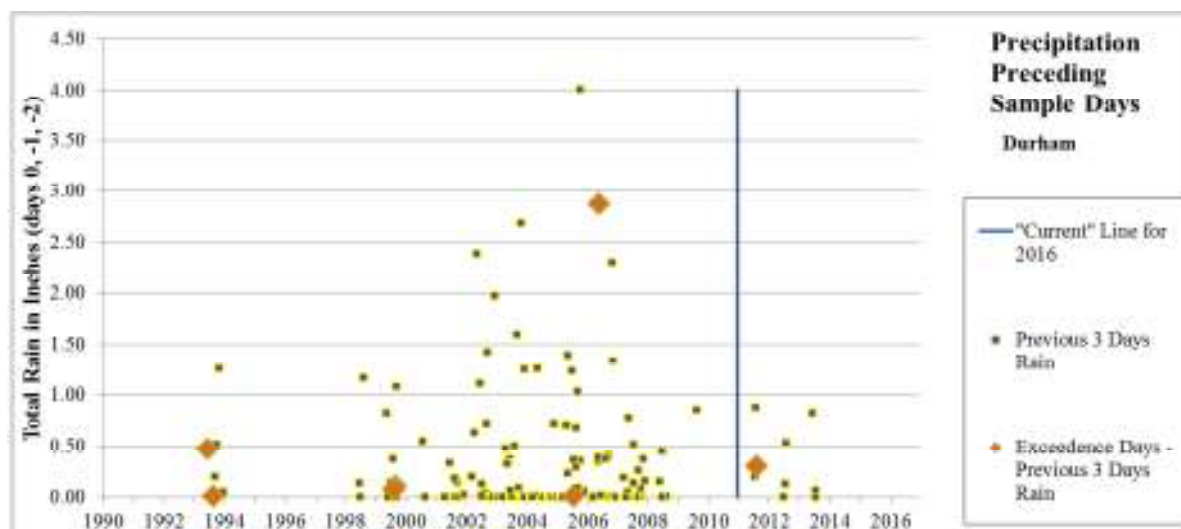
“Current” Line for 2014 – Per the methodology outlined in the CALM, all data from this referenced data is considered “current” unless. Available older data is provided for context. See the 2014 CALM for additional details.

#### COCHECO RIVER - CENTRAL AVE DAM (NHIMP600030608-04)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
COCHECO RIVER - CENTRAL AVE DAM	NHIMP600030608-04	<i>Escherichia coli</i>	Dover	4A-P	2-M

Three geometric means within current cycle all are below applicable water quality criteria. Nine individual samples collected from 2011 – 2016, one exceedence of single sample criteria (8/22/2011, 470 cts. / 100 ml). Streamflow at gage 01072800 on day of single sample exceedence was 0.36 cfs and rainfall for previous three days at Durham (USC00272174) was 0.30 inches. Samples included in 2016 cycle came from same station as previous cycles (07-CCH) and were collected under stream flow conditions of 0 – 2 cfs (stream gage 01072800) and 3-day rainfall totals of 0 – 1 inches (Durham weather station). Prior exceedences typically came from samples collected mostly under low flow and minimal rainfall.





## Notes:

E. COLI-GEO-CP = *Escherchia coli* geometric mean calculated from samples collected during the summer critical period.

E. COLI -GEO-NCP = *Escherchia coli* geometric mean calculated from samples collected outside the summer critical period.

E. COLI -GRAB-CP = *Escherchia coli* grab samples collected during the summer critical period.

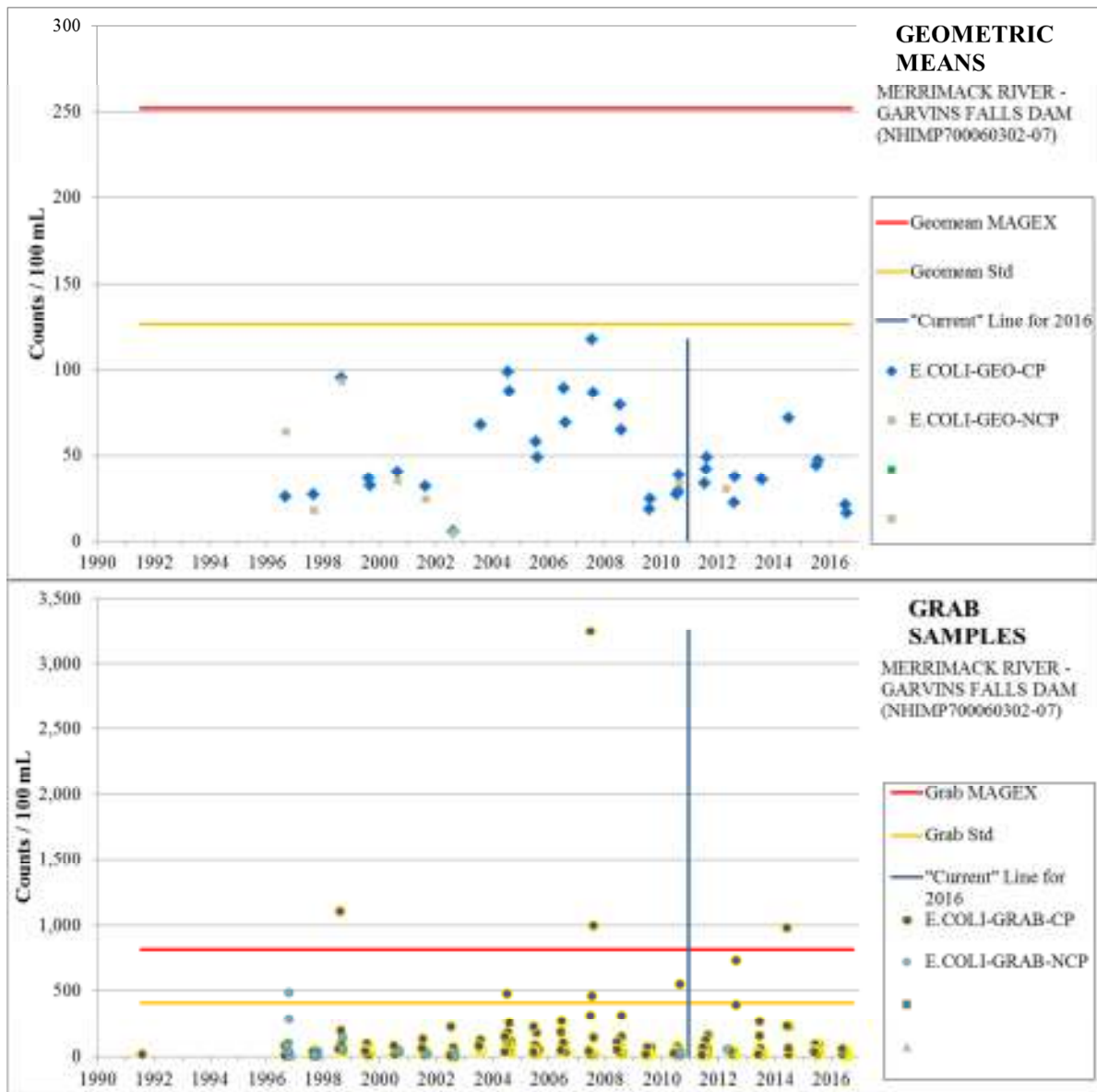
E. COLI -GRAB-NCP = *Escherchia coli* grab samples collected outside the summer critical period.

"Current" Line for 2016 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current" unless. Available older data is provided for context. See the 2016 CALM for additional details.

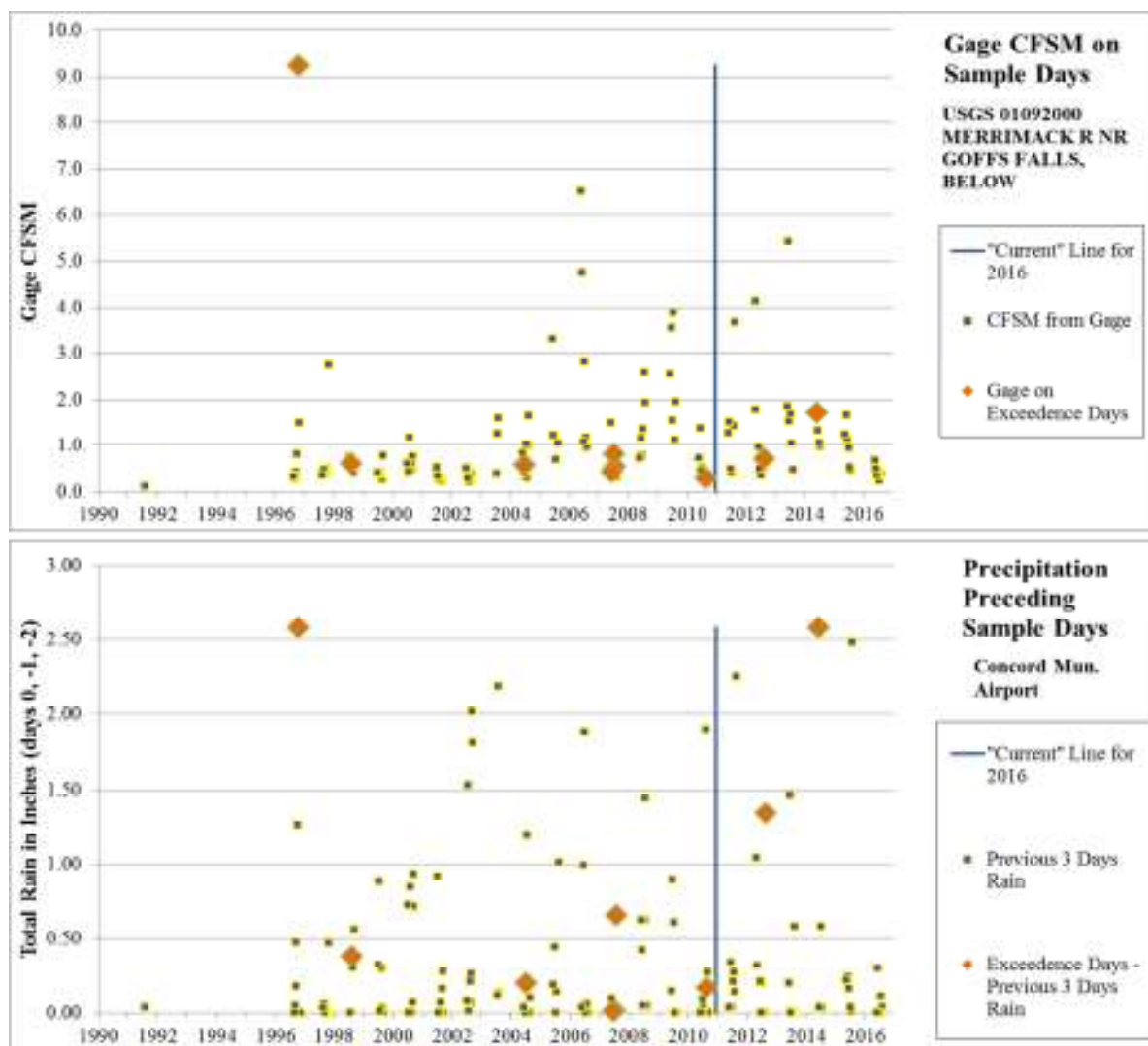
### MERRIMACK RIVER - GARVINS FALLS DAM (NHIMP700060302-07)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
MERRIMACK RIVER - GARVINS FALLS DAM	NHIMP700060302-07	<i>Escherichia coli</i>	Concord	4A-M	2-M

No geometric mean exceedences in the current period for the 2016 cycle or previous cycles; 69 samples collected (UMMP-09 & UMMP-10) since 2011, 2 above single sample criteria (1 above MAGEX); samples collected under range of flows (0.23 – 5.43 cfs; gage 01092000) and precipitation (0 – 2.58 inches in 3 days; Concord Airport). Single sample exceedences on 9/5/2012 and 6/26/14 occurred following 1.34 and 2.58 inches of rain in 3-days, respectively. However, ten samples collected following similar rainfall events between 1 – 2.58 inches of rain in past 3-days did not exceed single sample criteria. Therefore, the preponderance of evidence indicates that a majority of samples are within water quality criteria with only sporadic exceedences (2 of 69 samples, 3%). Regular sampling will continue to occur at site for foreseeable future.







## Notes:

E. COLI-GEO-CP = *Escherchia coli* geometric mean calculated from samples collected during the summer critical period.

E. COLI-GEO-NCP = *Escherchia coli* geometric mean calculated from samples collected outside the summer critical period.

E. COLI-GRAB-CP = *Escherchia coli* grab samples collected during the summer critical period.

E. COLI-GRAB-NCP = *Escherchia coli* grab samples collected outside the summer critical period.

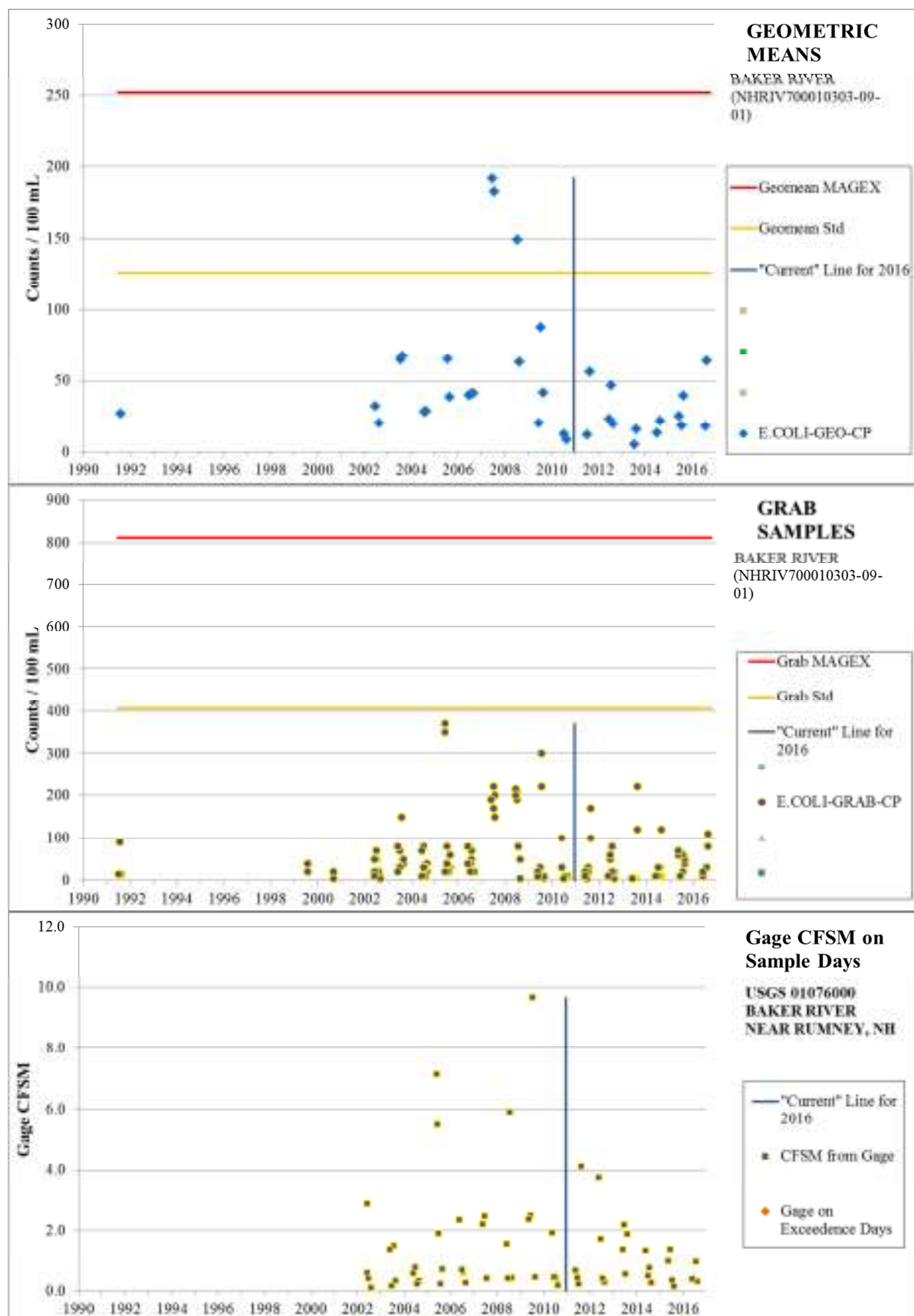
"Current" Line for 2016 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current" unless. Available older data is provided for context. See the 2016 CALM for additional details.

### BAKER RIVER (NHRIV700010303-09-01)

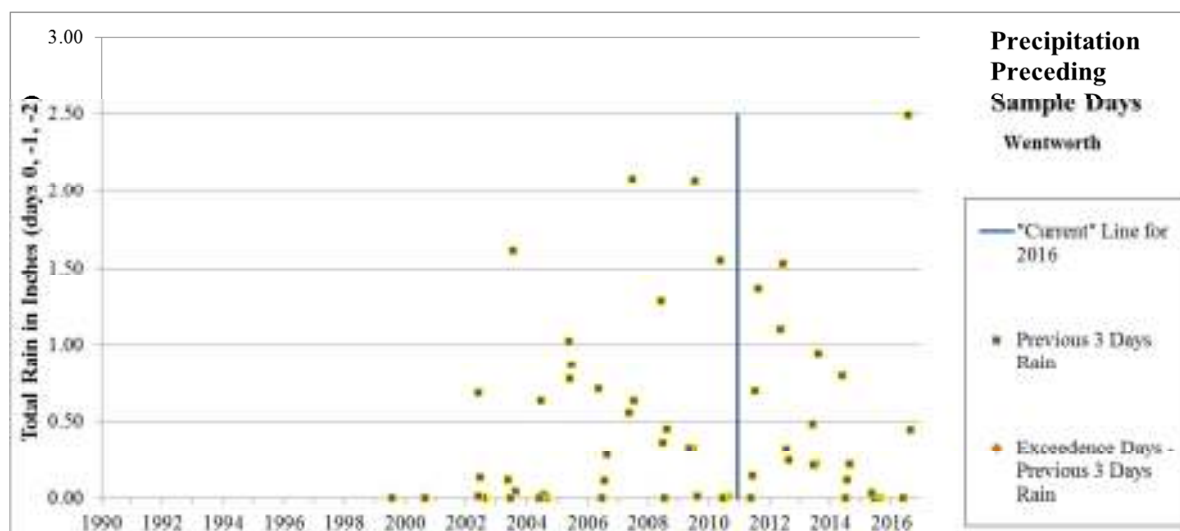
Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
Baker River	NHRIV700010303-09-01	<i>Escherchia coli</i>	Wentworth	4A-M	2-G

Three geometric mean standard exceedences in 2007 and 2008 (192.3, 183.0, 149.1 cts/100mL) occurred at stations 07-BKR and 07A-BKR. These stations are typically collected on the same day and show similar results between them. The high grab samples that resulted in a high geometric mean occurred after varied amounts of rainfall in the past three days of the samples being collected (0.36-2.08 inches) and varied flow conditions (0.40- 2.45 cfs). Multiple grab samples from both stations in current assessment period with varied precipitation and flow conditions resulting in no geometric mean exceedences. Baker River (NHRIV700010303-09-01) assessment category changed from 4A-M to

2-G based on data collected in the current assessment period.







Notes:

E. COLI-GEO-CP = *Escherchia coli* geometric mean calculated from samples collected during the summer critical period.

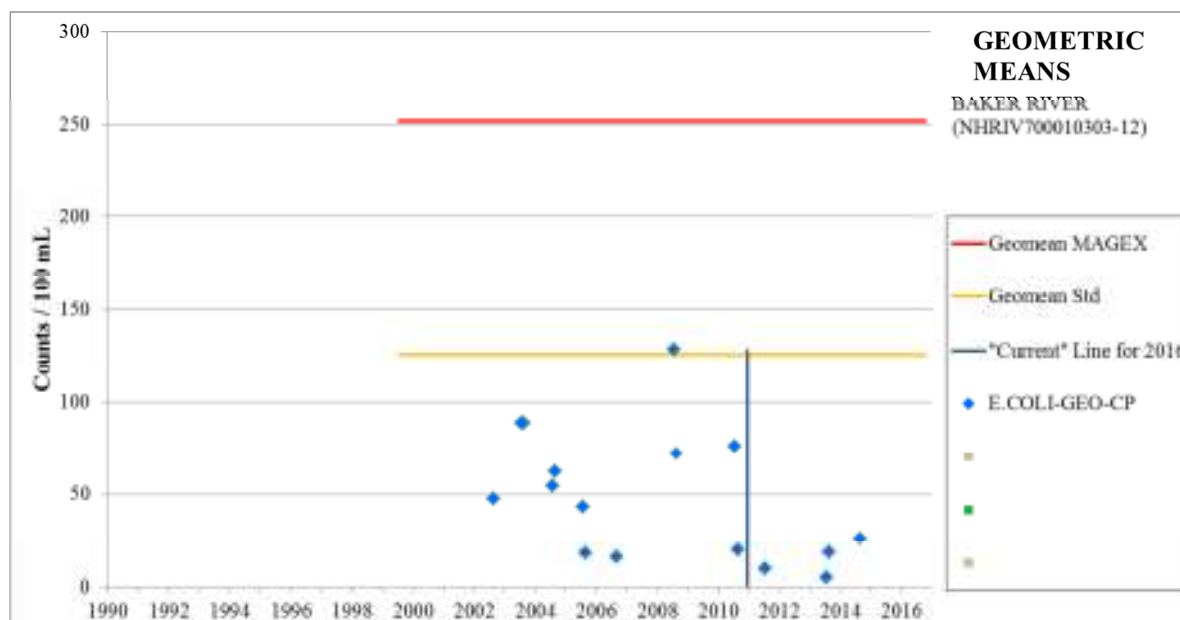
E. COLI -GRAB-CP = *Escherchia coli* grab samples collected during the summer critical period.

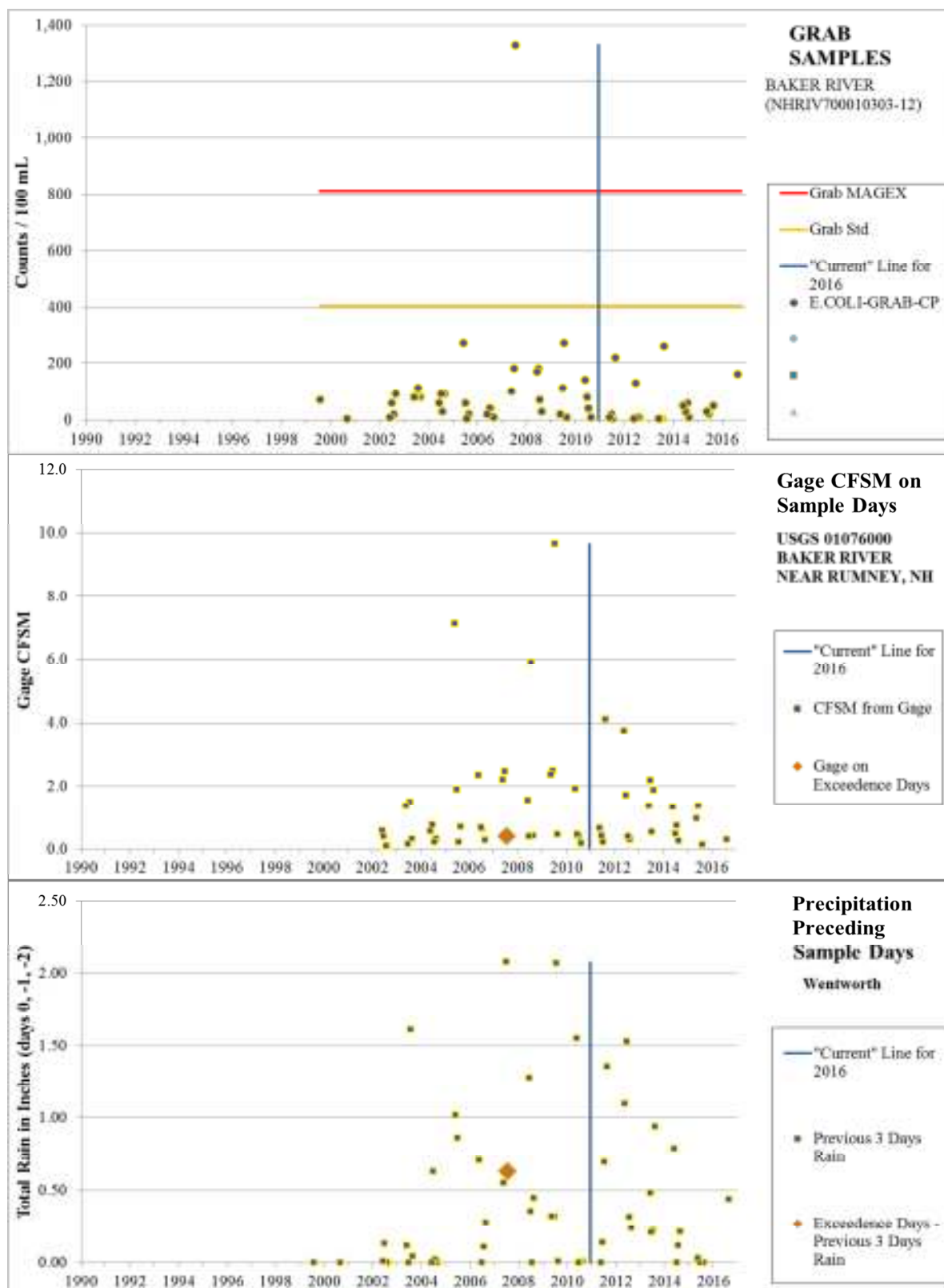
"Current" Line for 2016 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current" unless. Available older data is provided for context. See the 2016 CALM for additional details.

### BAKER RIVER (NHRIV700010303-12)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
Baker River	NHRIV700010303-12	<i>Escherichia coli</i>	Wentworth	4A-P	2-G

One historical geometric mean (129 cts/100mL) that had a corresponding high grab sample (1330 cts/100mL) at 06A-BKR that triggered the impairment. The high grab sample was collected after flow conditions of 0.40 cfs on the Baker River in Rumney and 0.63 inches of rain collected at the Wentworth rain gage. Since the impairment determination, many grab samples were collected and four geometric means calculated in similar flow and rainfall condition with no exceedences all from station 06A-BKR. Baker River (NHRIV700010303-12) assessment category changed from 4A-P to 2-G based on data collected in the current assessment period.





Notes:

E. COLI-GEO-CP = *Escherchia coli* geometric mean calculated from samples collected during the summer critical period.

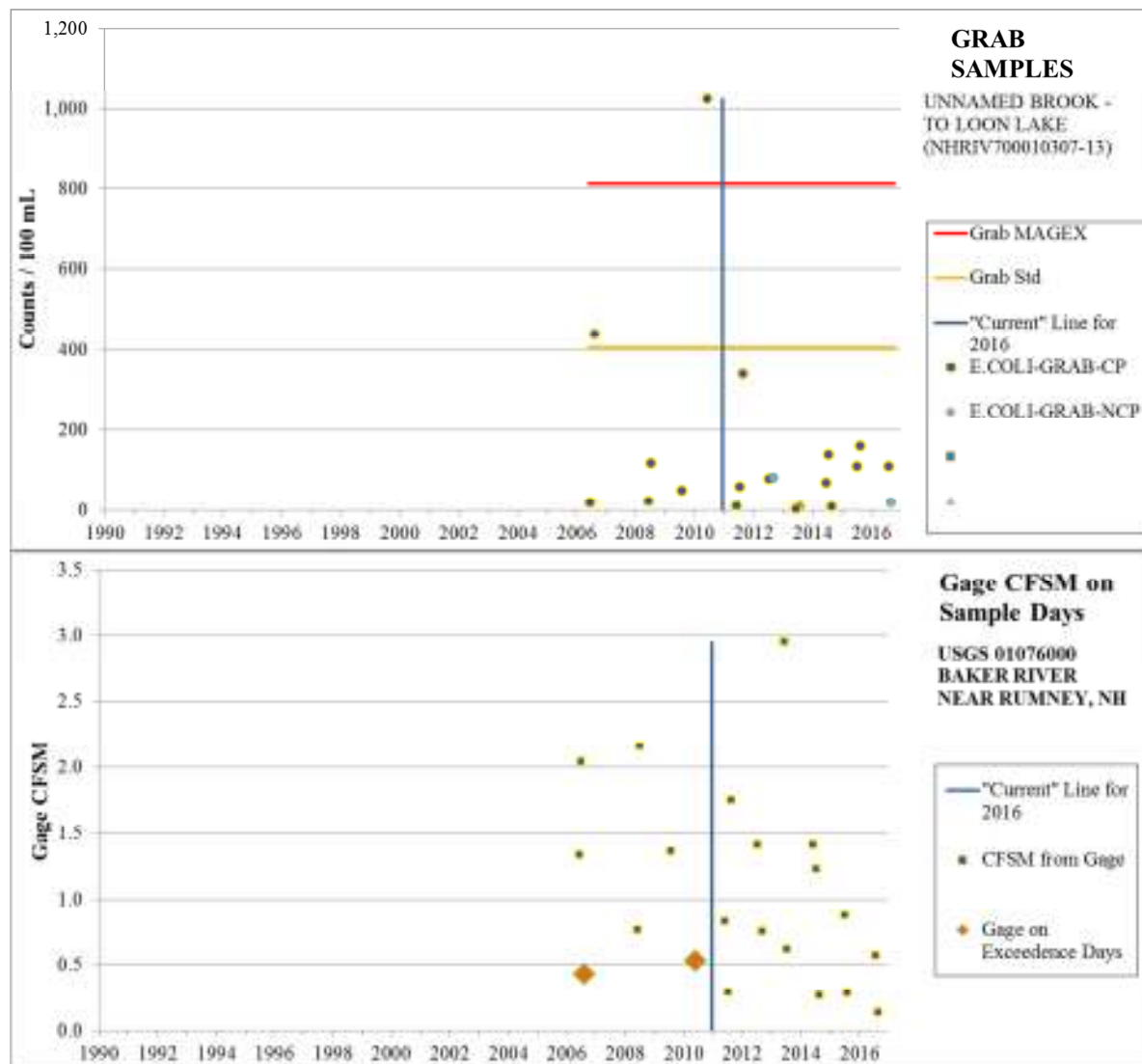
E. COLI -GRAB-CP = *Escherchia coli* grab samples collected during the summer critical period.

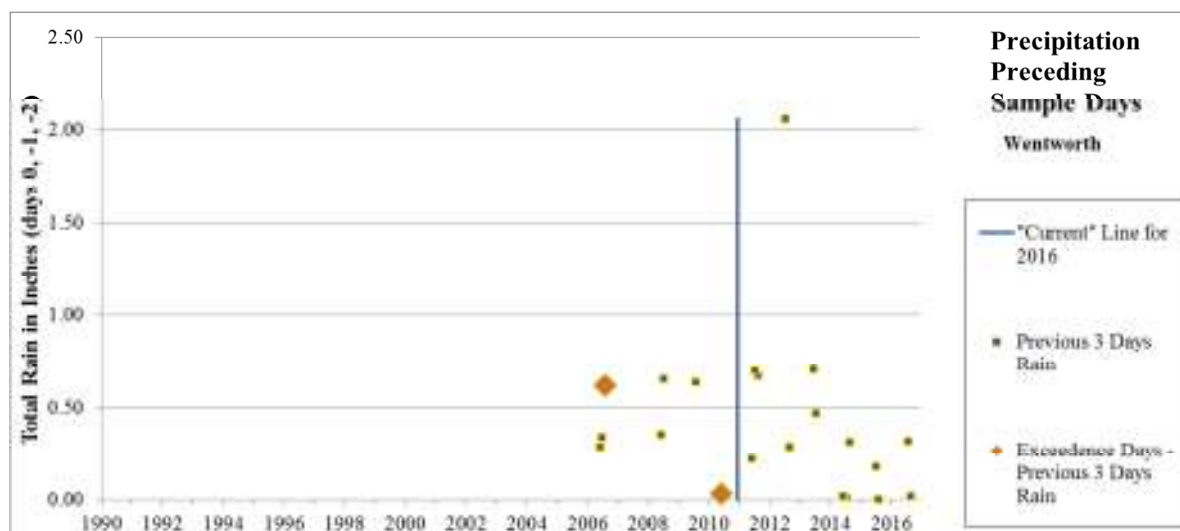
"Current" Line for 2016 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current" unless. Available older data is provided for context. See the 2016 CALM for additional details.

**UNNAMED BROOK - TO LOON LAKE (NHRIV700010307-13)**

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
UNNAMED BROOK - TO LOON LAKE	NHRIV700010307-13	<i>Escherichia coli</i>	Plymouth	4A-P	2-M

Fourteen grab samples were collected in the current period for the 2016 assessment and all are below the standard. Samples have been collected at either station LOOPLY11 or LOOPLY1L. The samples have been collected in similar conditions such as those previous high grab samples that triggered the impairment. Unnamed Brook to Loon Lake (NHRIV700010307-13) changed from assessment category 4A-P to 2-M.





Notes:

E. COLI -GRAB-CP = *Escherchia coli* grab samples collected during the summer critical period.

E. COLI -GRAB-NCP = *Escherchia coli* grab samples collected outside the summer critical period.

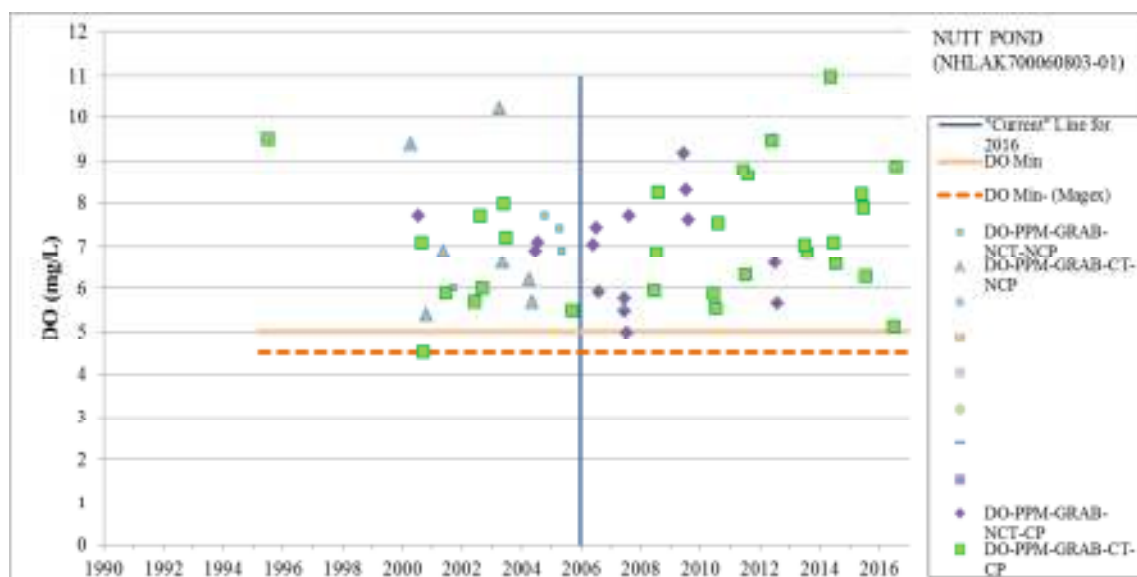
“Current” Line for 2016 – Per the methodology outlined in the CALM, all data from this referenced data is considered “current” unless. Available older data is provided for context. See the 2016 CALM for additional details.

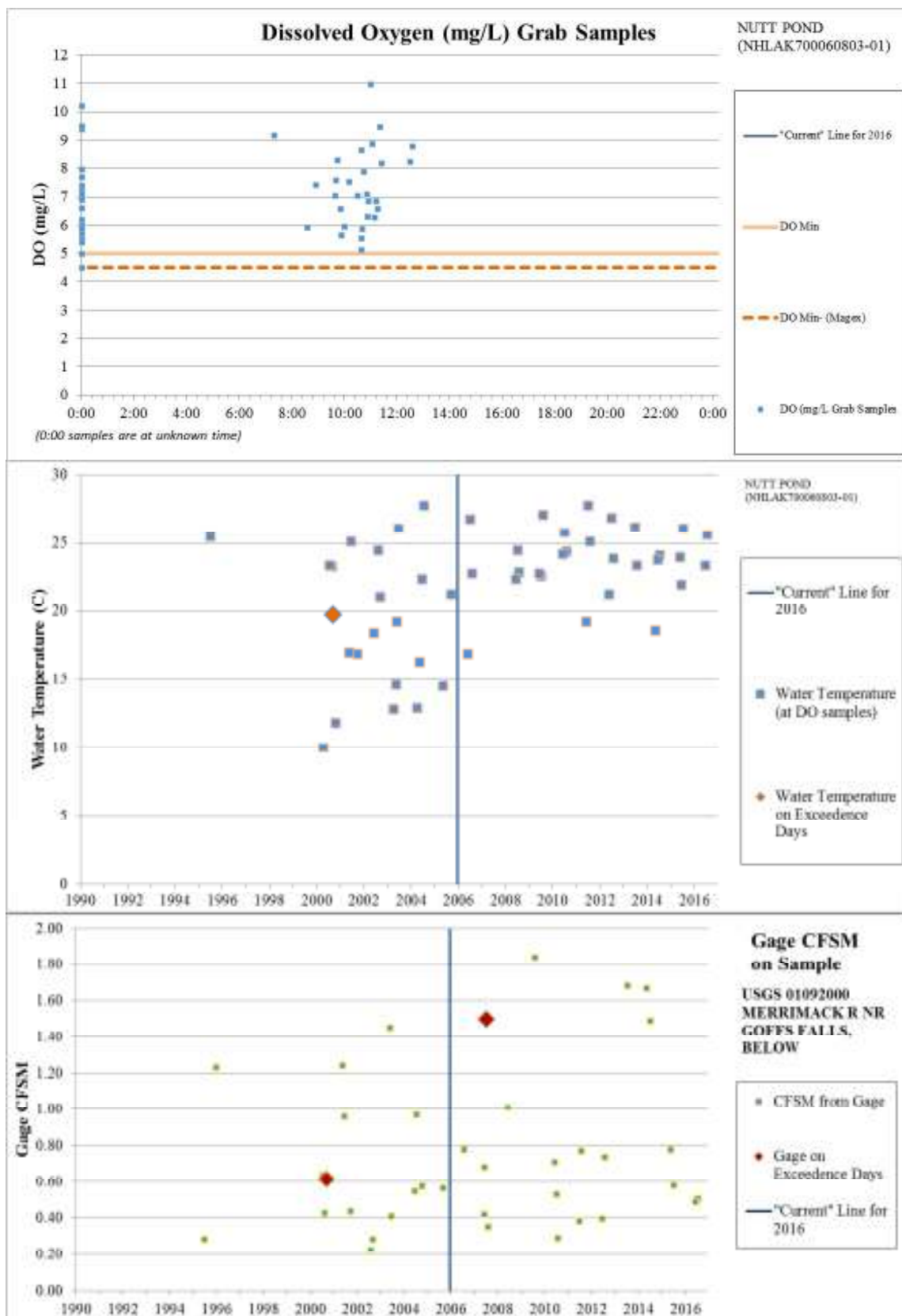
## Dissolved Oxygen

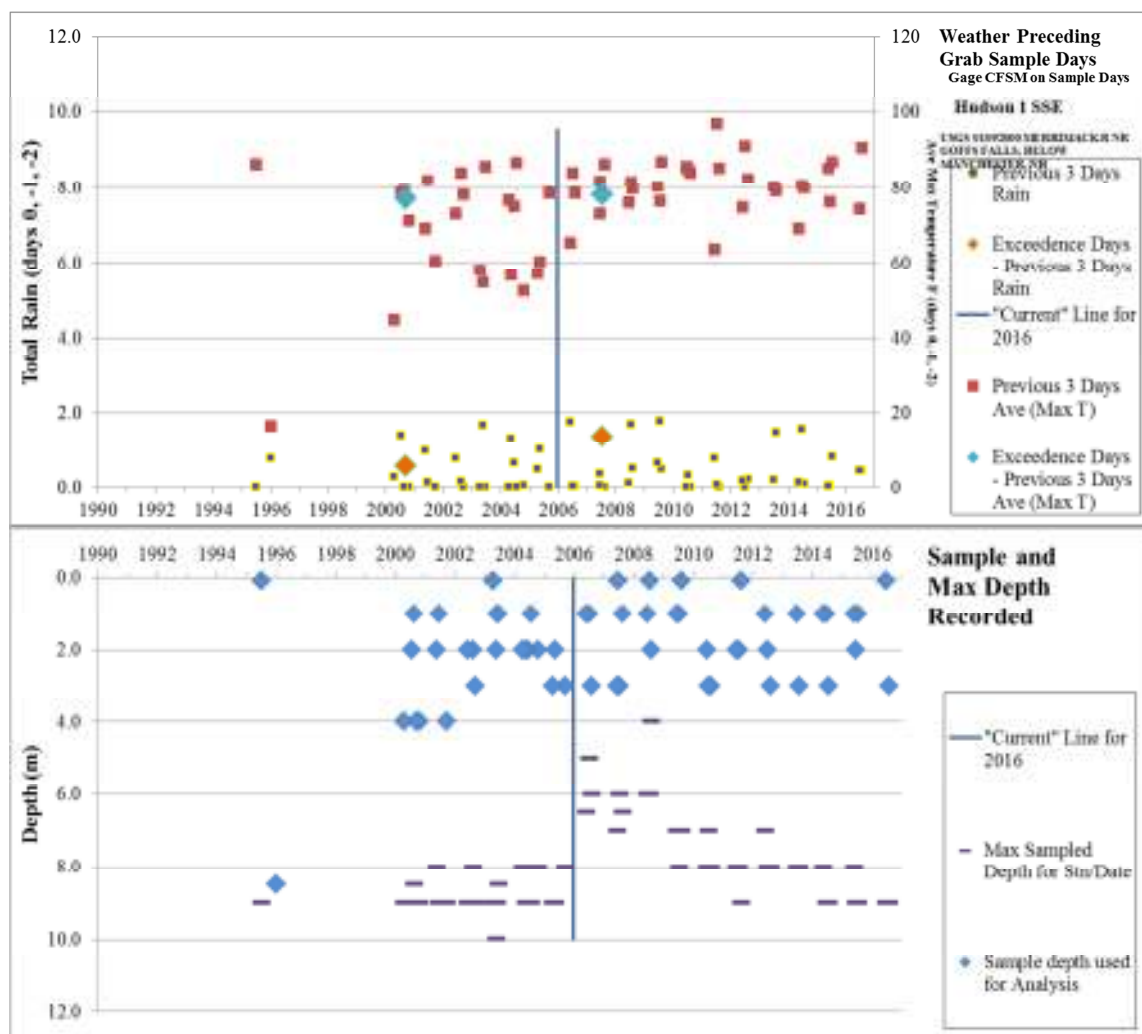
### NUTTS POND (NHLAK700060803-01)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
NUTTS POND	NHLAK700060803-01	Dissolved Oxygen (mg/L)	MANCHESTER	4A-M	2-M

2016: Class B waterbody. Epilimnetic DO ppm values meet standards, with n=2 exceedences of the 5 ppm minimum, though both samples are within the range of meter error. The MAGEX from September of 2000 has aged out, and that trend has not persisted with DO ppm in the waterbody. Based on the data collected between 2006 and 2016, the majority of the samples are attaining standards, and the 10% exceedence rule is not met. Nutts Pond is delisted and assessed as 2-M based on the data from this assessment round.



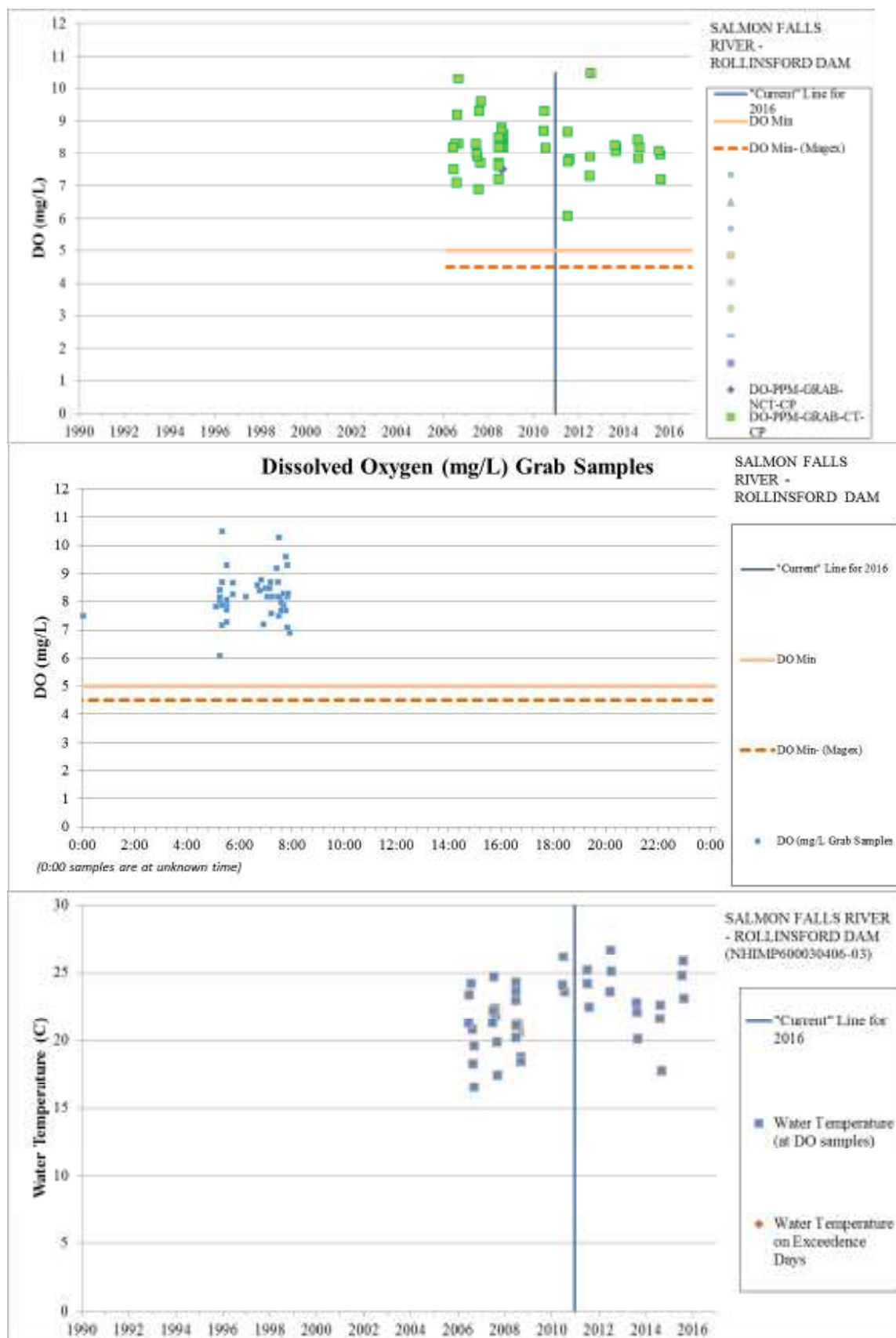




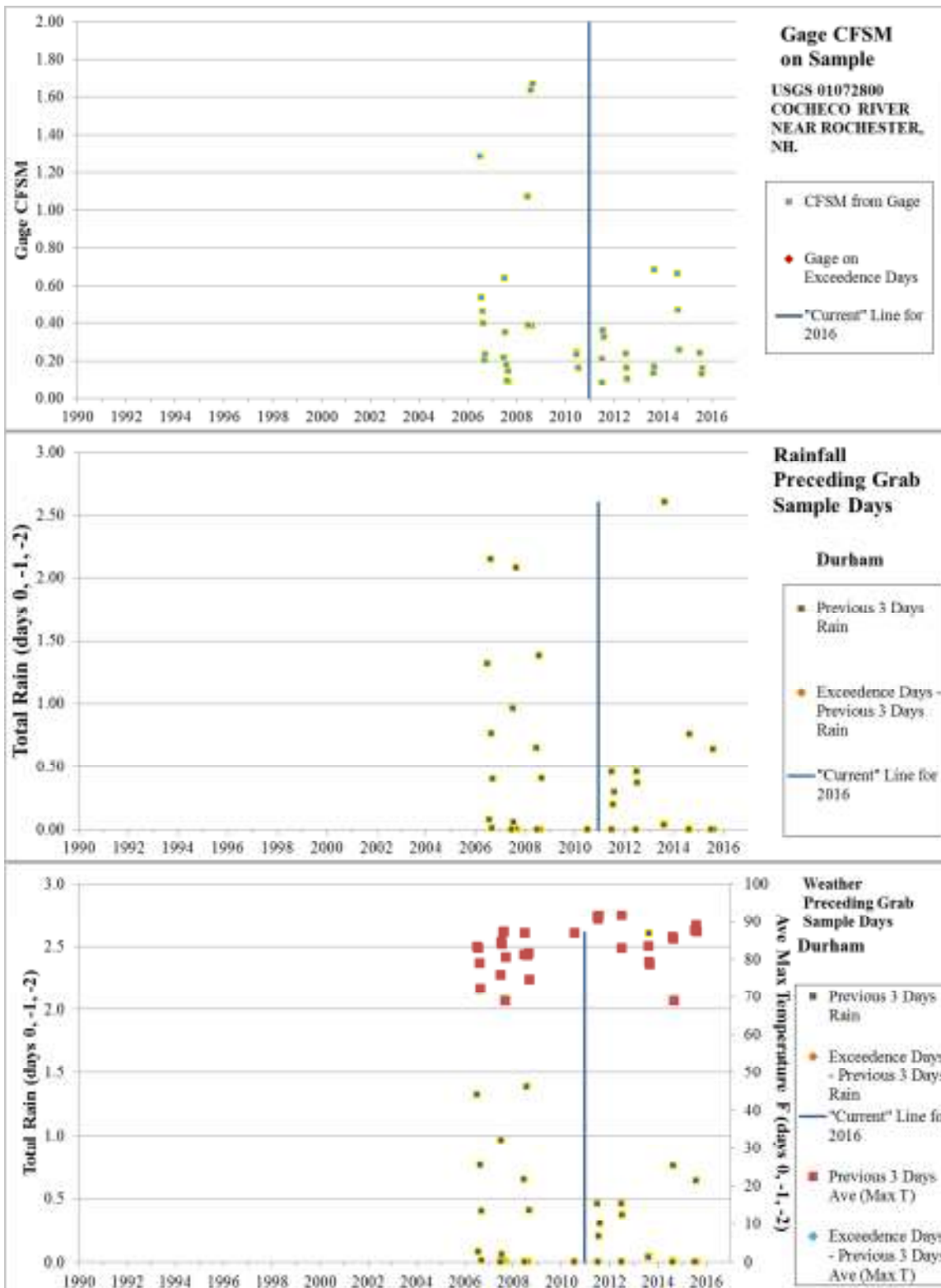
## SALMON FALLS RIVER-ROLLINSFORD DAM (NHIMP600030406-03)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
SALMON FALLS RIVER-ROLLINSFORD DAM	NHIMP600030406-03	Dissolved Oxygen (mg/L)	ROLLINSFORD	4A-M	2-G

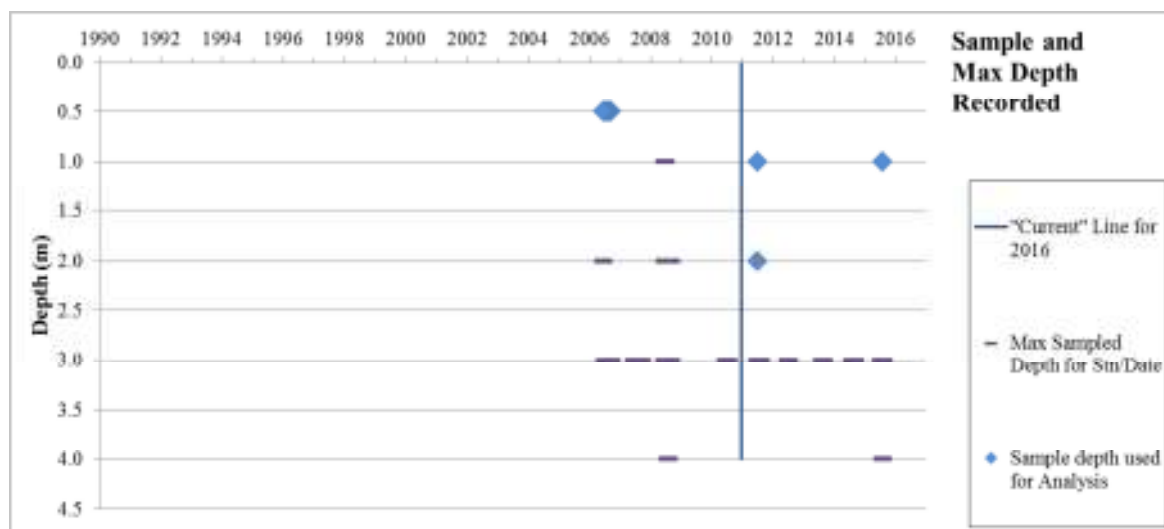
2016: Class B waterbody. 57 acre impoundment. Data appear to be consistently good, supporting delist.









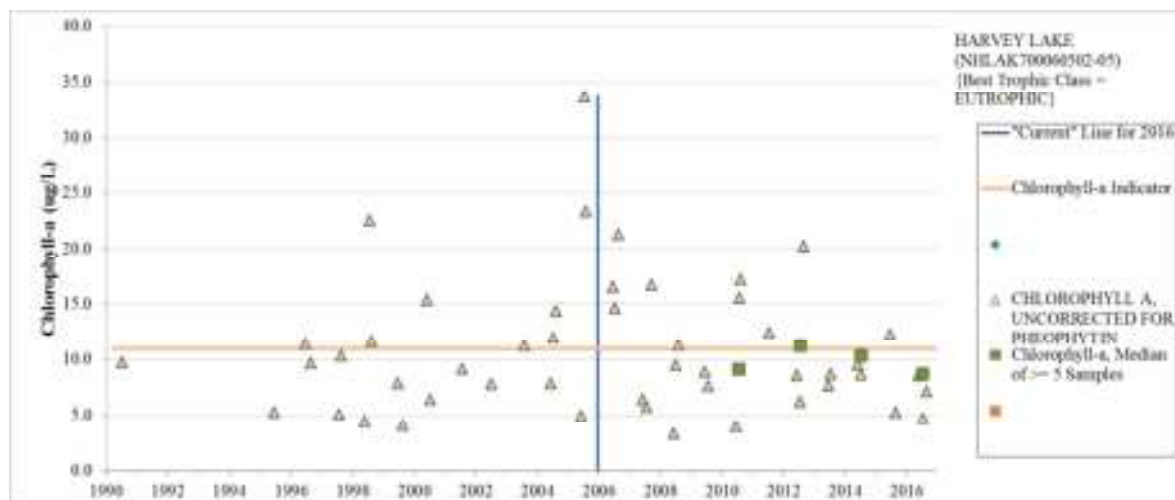


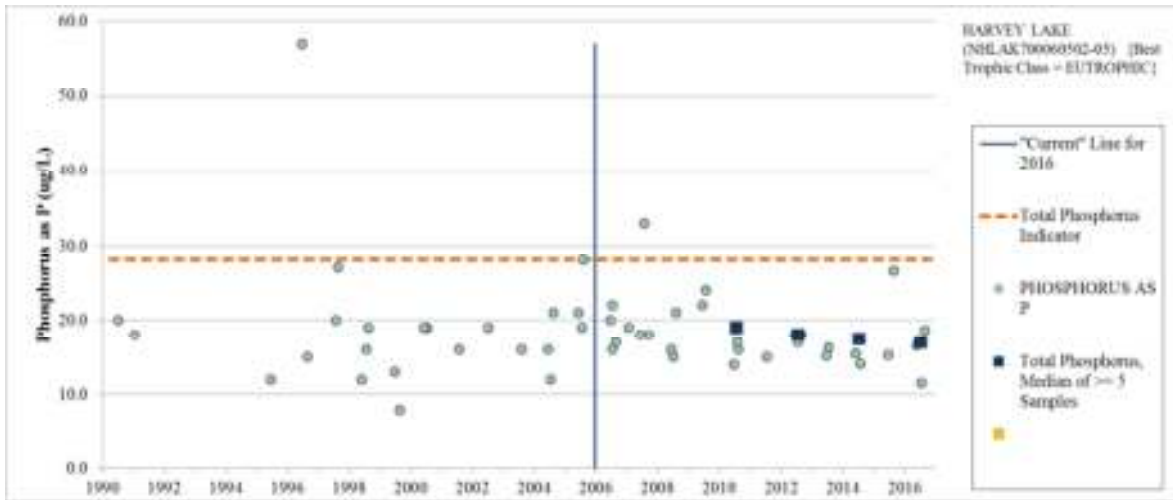
## Chlorophyll-a/Total Phosphorus for Aquatic Life Use Support

### HARVEY LAKE (NHLAK700060502-05)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
HARVEY LAKE	NHLAK700060502-05	Chlorophyll-a	Northwood	4A-M	2-M
		Total Phosphorus		4A-M	2-M

The median chlorophyll-a value has consistently been below threshold for Eutrophic lakes three of the last four assessment cycles. The 2012 cycle, which impaired chlorophyll-a, did so based upon a median chlorophyll-a value of 11.26 ug/L where the threshold is 11.0 ug/L. The 2012 impairment may have been a bit premature. The pond is regularly monitored through the Volunteer Lake Assessment Program (VLAP) and VLAP data indicate stable chlorophyll levels generally below threshold since 2008. A total phosphorus TMDL was completed and approved for Harvey Lake in 2012. Total phosphorus medians have remained below the threshold for all assessment cycles and the impairment for total phosphorus was driven by the stressor/response matrix.





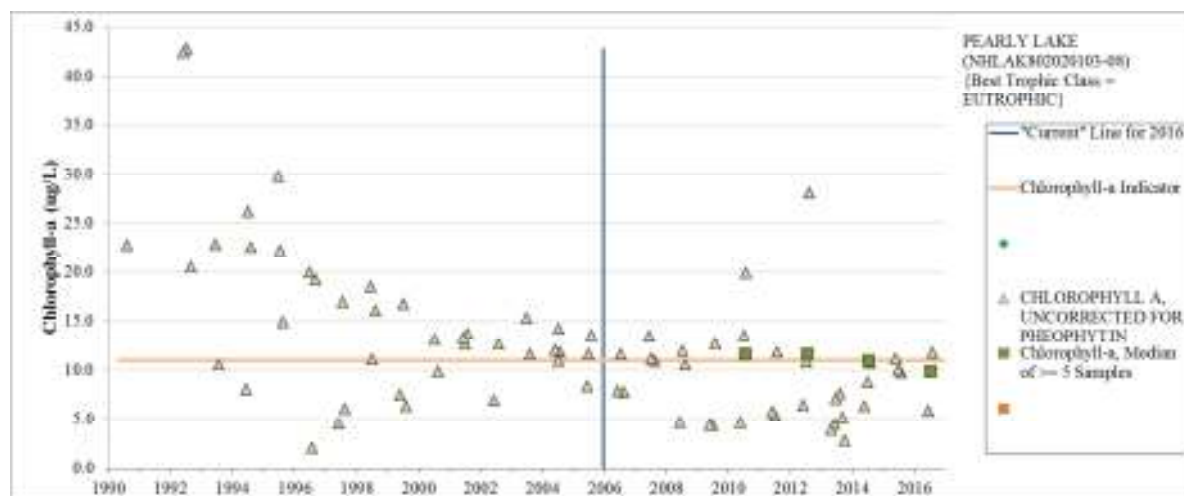
**PEARLY POND (NHLAK802020103-08)**

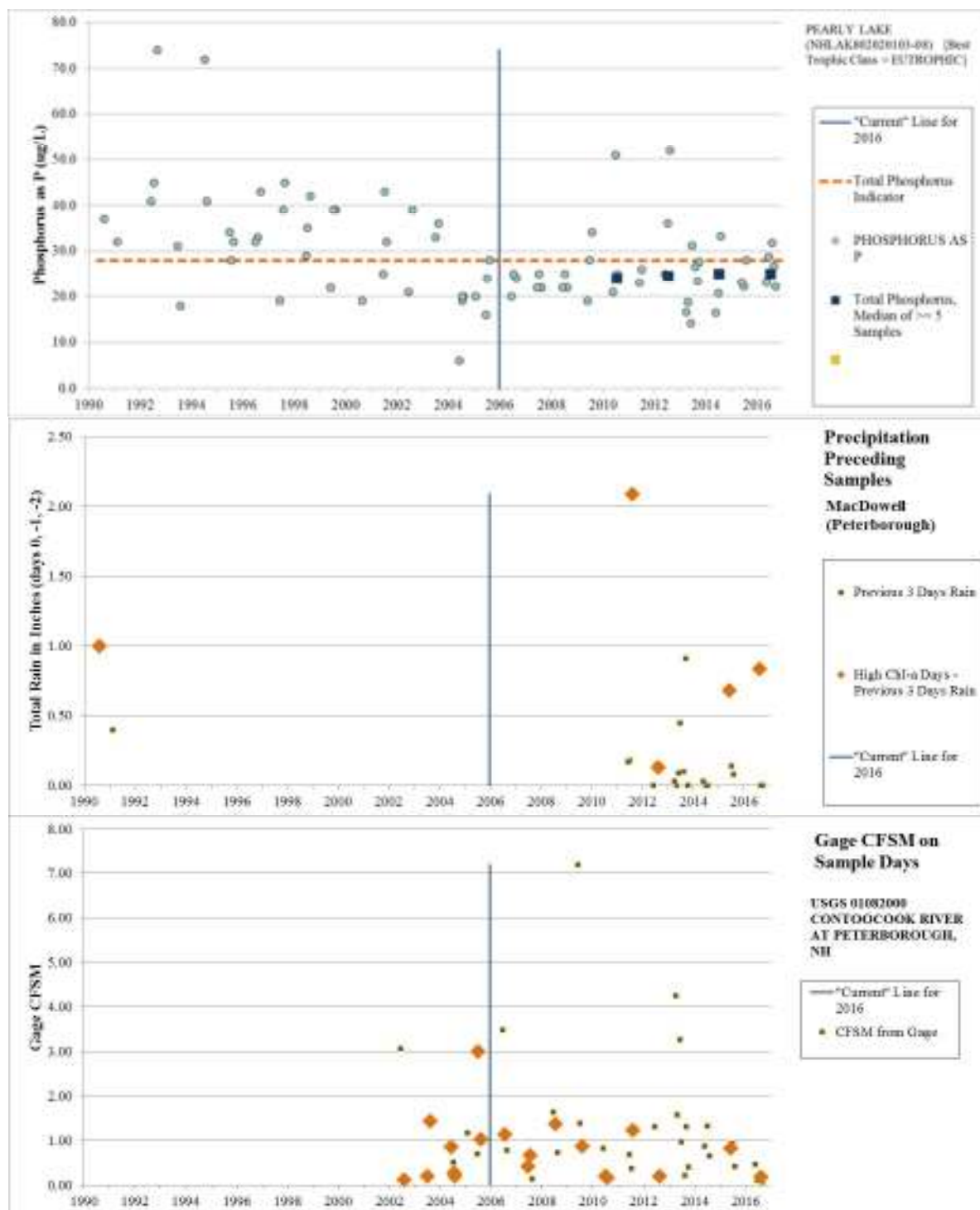
Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
PEARLY POND	NHLAK802020103-08	Chlorophyll-a	Rindge	4A-M	2-M
		Total Phosphorus		4A-M	2-M

Chlorophyll-a median has remained below the threshold for Eutrophic lakes in the 2014 and now 2016 assessment cycles. VLAP data indicate significant decreases in chlorophyll-a and total phosphorus since monitoring began. TMDL completed in 2014. The lake association and Franklin Pierce University have conducted enhanced monitoring since the TMDL completion and applied for and received a 2016 319 grant for implementation activities to reduce phosphorus loading including: stormwater controls, waterfowl control, wastewater, and septic inputs. With management activities on-going it is expected that the chlorophyll-a and phosphorus levels will continue to decline or at least remain below the threshold. The high chlorophyll value measured in August of 2012 was during a dry period with no flow into or out of the pond. Samples have been collected in similar conditions since 2012 and algal growth has remained lower.

From the Pearly Pond TMDL: Successful implementation of this TMDL will not be based on meeting the in-lake target TP concentration of 14 ug/l or the reduction target of 44% (105 kg/yr). Rather, compliance will be based on continued lake monitoring and assessment of monitoring results using the methods described for assessing water quality standards attainment in the most recent version of the Consolidated Assessment Listing Methodology (CALM) for the response variables (DO, cyanobacteria, and chl a), with the exception that the mean and peak chl a thresholds will be 5 and 17 ug/L respectively.

From 1967 to 2008 (41 years), the Franklin Pierce University (FPU) wastewater treatment plant (WWTP) discharged to a wetland in the Mountain Road tributary sub watershed of Pearly Lake. The National Pollutant Discharge Elimination System (NPDES) permit number for this discharge was NH0101044. In 2009, the University eliminated this surface water discharge when it completed construction and began operation of a rapid infiltration basin (RIB) system to treat it's wastewater via groundwater infiltration.





### BABOOSIC LAKE (NHLAK700060905-01-01)

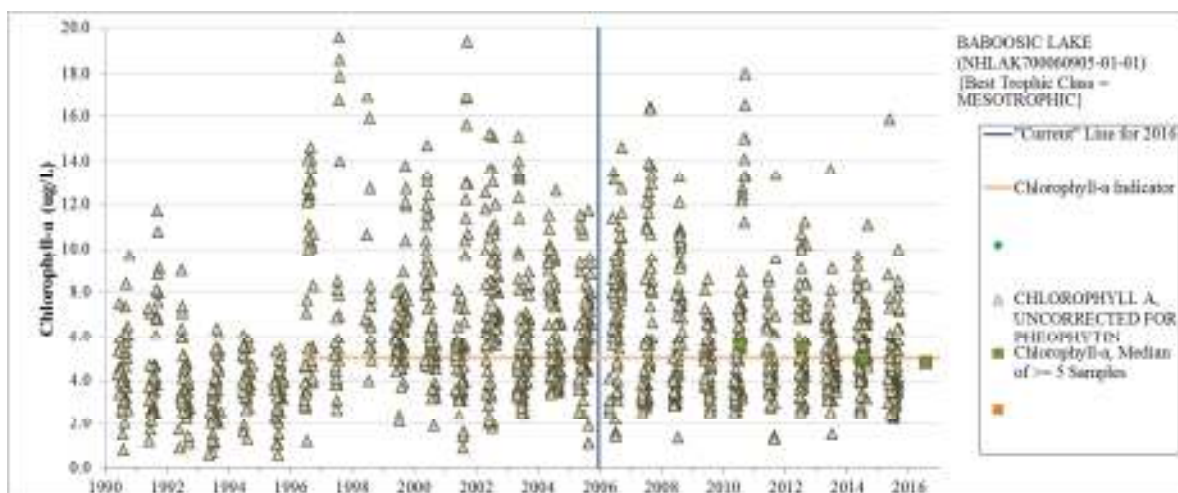
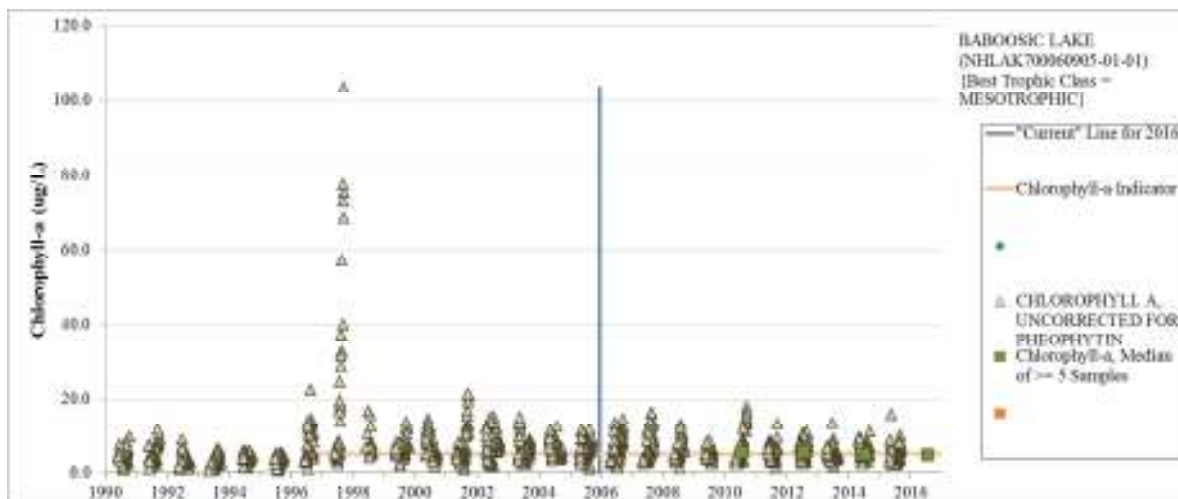
Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
BABOOSIC LAKE	NHLAK700060905-01-01	Chlorophyll-a	Amherst	4A-M	2-M
		Total Phosphorus		4A-M	3-PNS

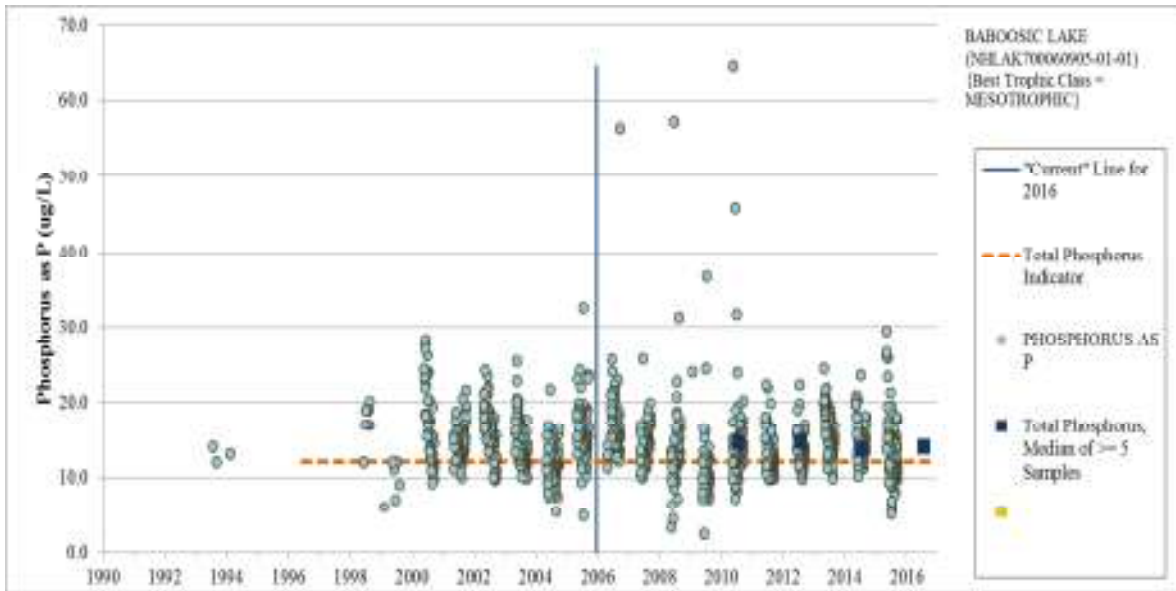
The chlorophyll-a median value was approximately equal to the threshold in 2014 assessment cycle and has decreased below the median as calculated for the 2016 assessment cycle. The lake participates in the UNH Lay Lakes Monitoring Program (LLMP) and the data indicate decreased chlorophyll-a during the period 2006-2015 and

decreasing total phosphorus levels since 2000.

In 2002, the Town of Amherst, local residents, and NHDES began working to develop plans for improving septic systems near Baboosic Lake's Washer Cove. Many homes were known to have failed septic systems, systems that were routinely inundated, or systems that were otherwise severely deficient in meeting modern design standards. Four project phases used resources from the State, EPA, the Town, and system-users to address this situation by designing and constructing a new community septic system. The system was fully completed in 2009. It serves 18 residences which had the highest priority problems. The effluent disposal area is located on Town land at higher elevation and greater distance from the Lake. The homes each have sealed septic tanks which pump effluent up to the modern effluent disposal area for proper treatment.

The Baboosic Lake Association (BLA) in cooperation with NHDES began developing a watershed restoration plan to address other areas of concern in 2006. The completed plan, and subsequent plan updates are being used to prioritize corrective actions to reduce sediment and nutrient loading to the lake. The primary stormwater issues in the watershed are due to runoff and erosion from aging infrastructure or unpaved camp-type roads with little or no stormwater control. The BLA has been working with NHDES, private landowners, and the Towns of Amherst and Merrimack to install a series of stormwater runoff improvements and best management practices (BMPs) such as raingardens and infiltration trenches. Two phases of BMP implementation projects have been completed to date, and a third phase is currently under way.





## Chlorophyll-a for Primary Contact recreation (i.e. Swimming)

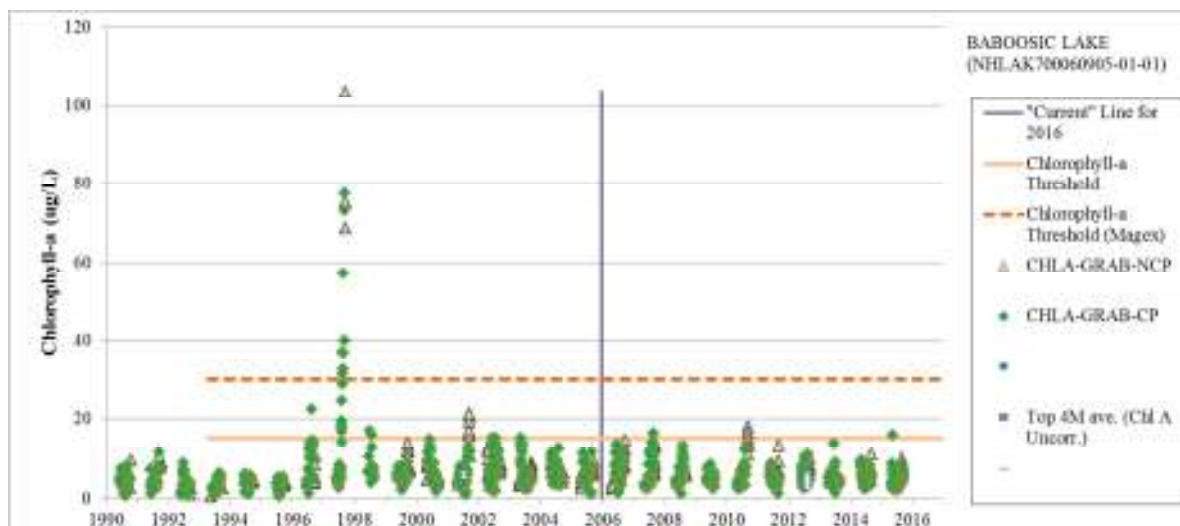
### BABOOSIC LAKE (NHLAK700060905-01-01)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
BABOOSIC LAKE	NHLAK700060905-01-01	Chlorophyll (PCR)	AMHERST	4A-M	2-M

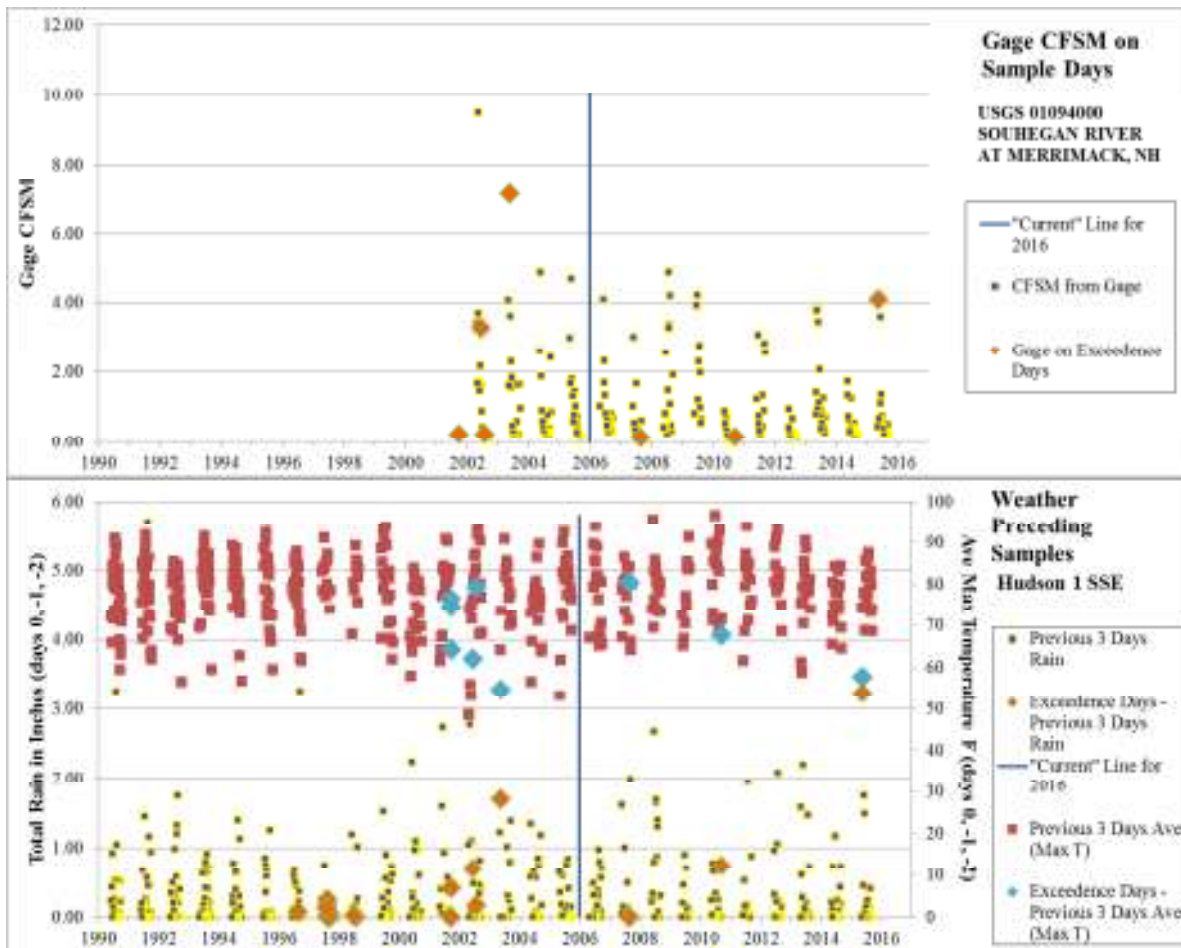
2016: During the current periods for the 2016 cycle there were five out of 619 samples that exceeded the WQS. Two of the exceedences were in the critical period and three were in the non-critical period. The exceedences happened during both dry and wet weather. Given that less than 1% of samples collected in 10 years preceding this assessment, Baboosic Lake has been assessed and fully supporting.

In 2002, the Town of Amherst, local residents and NHDES began working to develop plans for improving septic systems near Baboosic Lake's Washer Cove. Many homes were known to have failed septic systems, systems that were routinely inundated, or systems that were otherwise severely deficient in meeting modern design standards. Four project phases used resources from the State, EPA, the Town, and system-users to address this situation by designing and constructing a new community septic system. The system was fully completed in 2009. It serves 18 residences that had the highest priority problems. The effluent disposal area is located on Town land at higher elevation and greater distance from the Lake. The homes each have sealed septic tanks which pump effluent up to the modern effluent disposal area for proper treatment.

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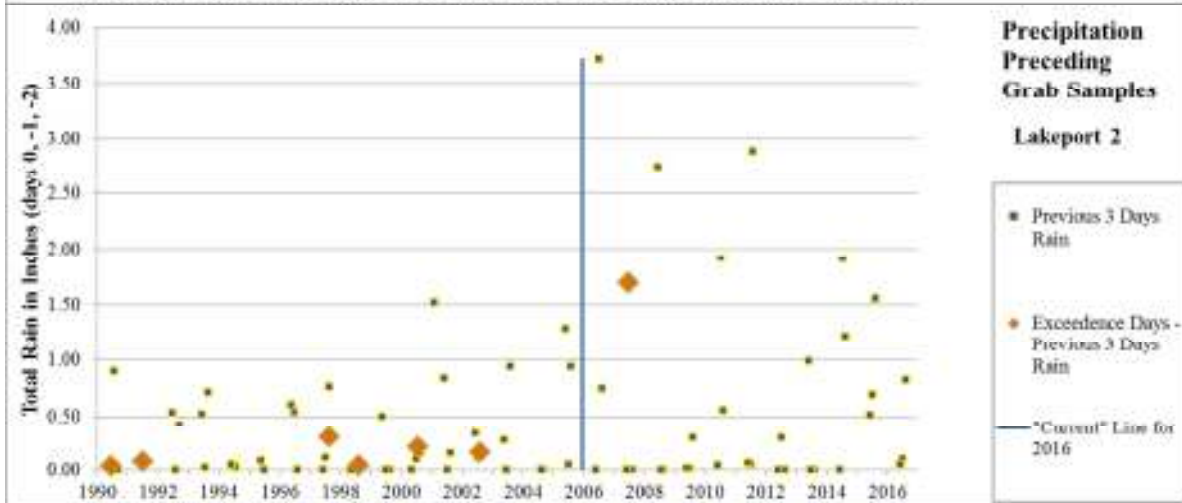
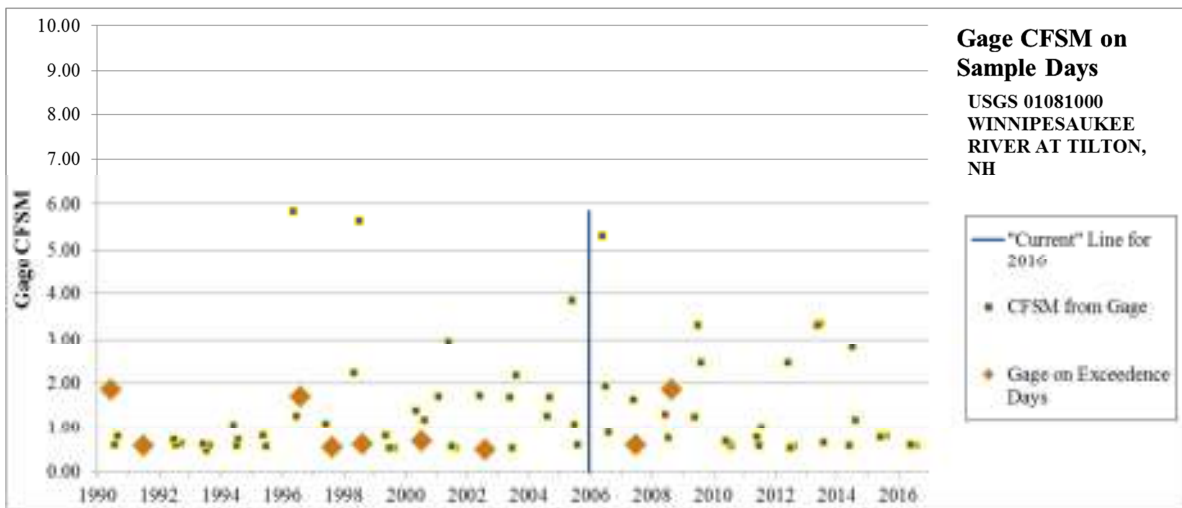
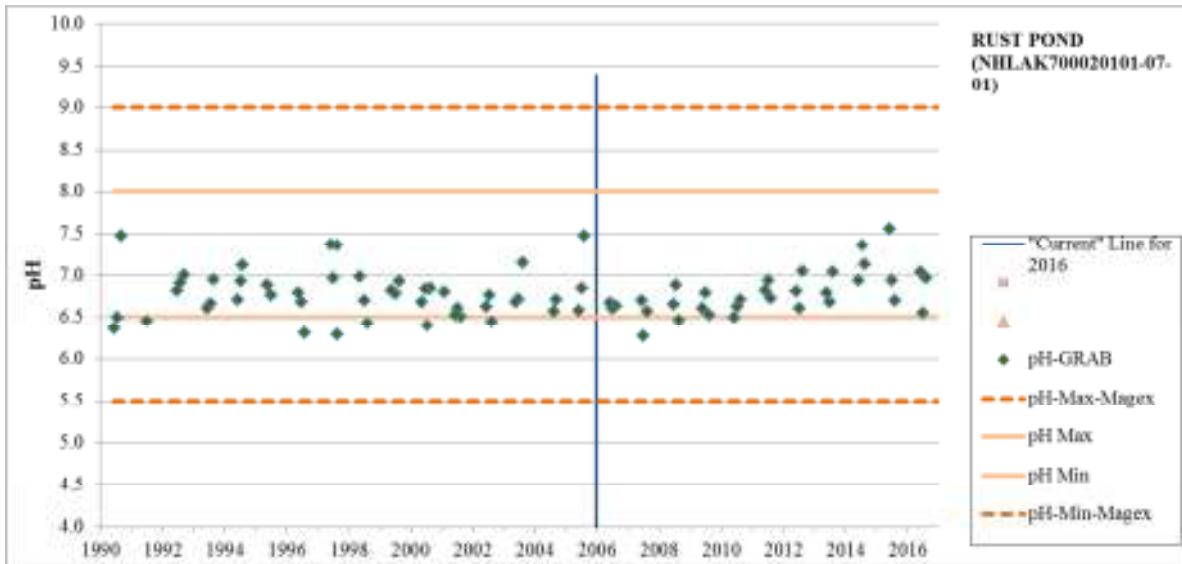
## pH

### RUST POND (NHLAK700020101-07-01)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
RUST POND	NHLAK700020101-07-01	pH	Wolfeboro	4A-M	2-M

2016: Grab samples from RUSWOLD indicate impairment for the 2016 cycle. Two of 33 (6%) <10% of samples were below pH 6.5 (pH values of 6.4 - 6.27). 31 of 33 (96%) of samples taken were within the acceptable pH range (6.5 to 8.0). Samples that exceeded criteria were taken in different months from different years and one was after a 1.69" rain event.





**Notes:**

pH-GRAB = pH value from a grab sample.

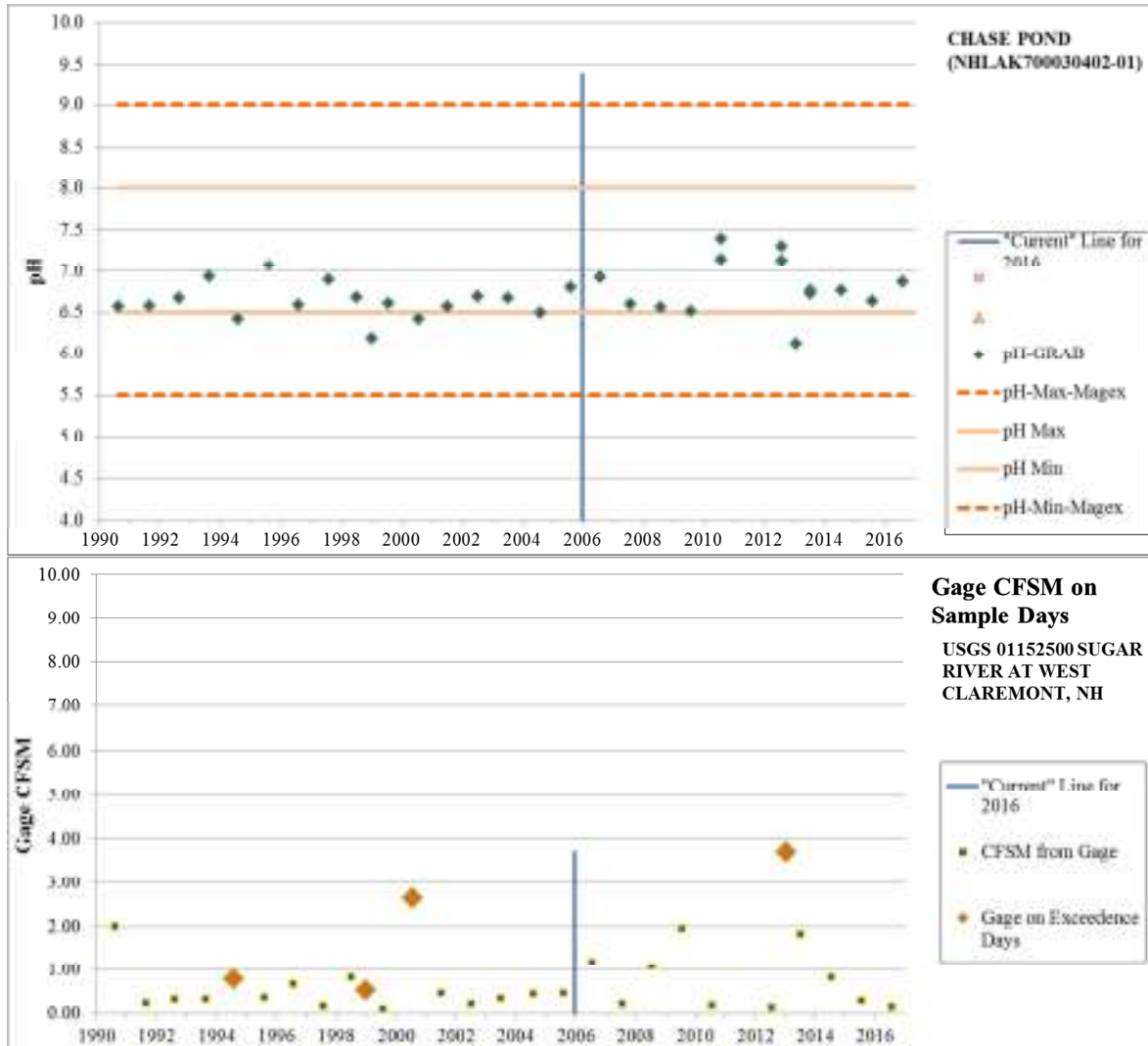
"Magex" refers to the magnitude of exceedence indicator described in the Consolidated Assessment and Listing Methodology.

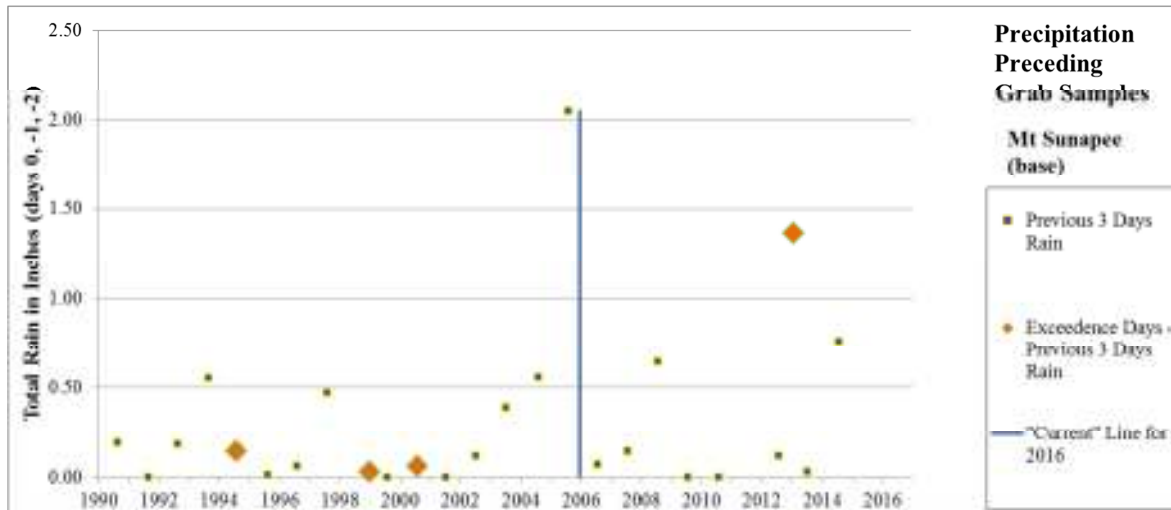
"Current" Line for 2016 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current" unless. Available older data is provided for context. See the 2016 CALM for additional details.

### CHASE POND (NHLAK700030402-01)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
CHASE POND	NHLAK700030402-01	pH	Wilmot	4A-M	2-M

2016: 1 of 14 = (7% or <10%) of grab samples were below pH 6.5 (pH value of 6.13). Exceedence sample was taken in a winter month with 1.37" of rain in a 3-day period.





Notes:

pH-GRAB = pH value from a grab sample.

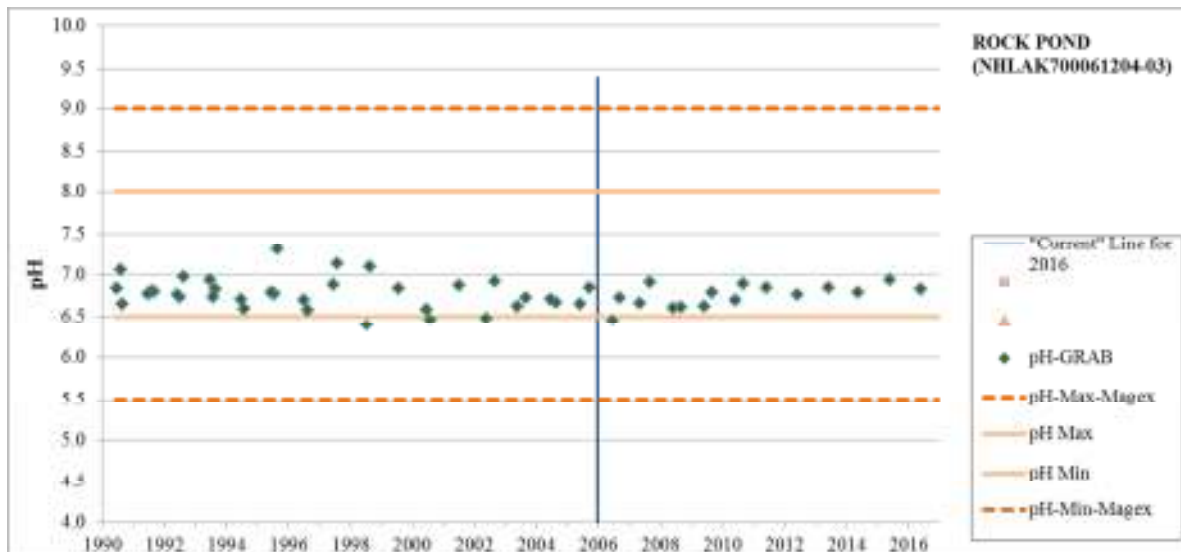
“Magex” refers to the magnitude of exceedence indicator described in the Consolidated Assessment and Listing Methodology.

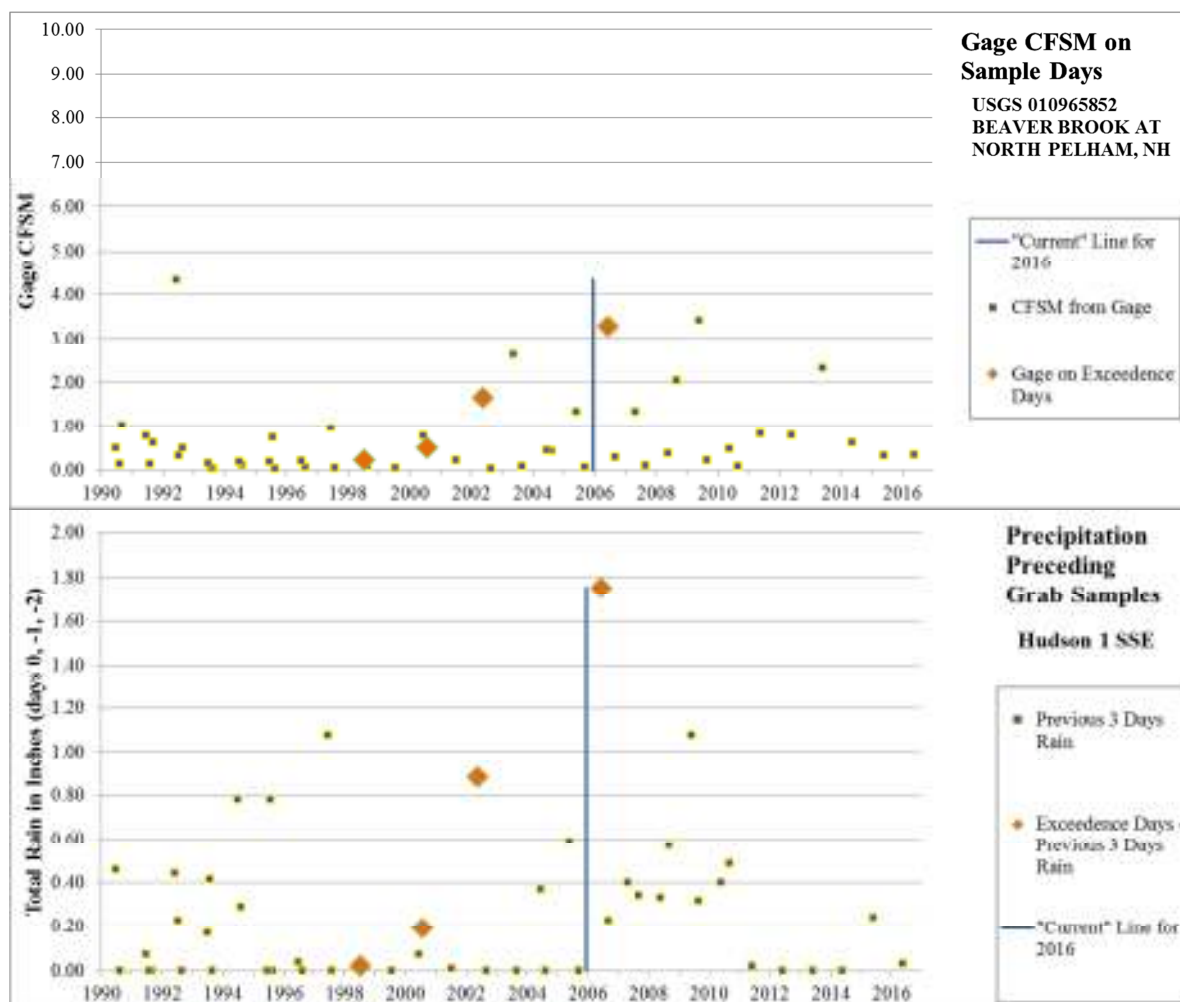
“Current” Line for 2016 – Per the methodology outlined in the CALM, all data from this referenced data is considered “current” unless. Available older data is provided for context. See the 2016 CALM for additional details.

### ROCK POND (NHLAK700061204-03)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
ROCK POND	NHLAK700061204-03	pH	Windham	4A-M	2-M

2016: One of 16 (6%) of samples were below pH 6.5, (value was 6.45). The one exceedence sample was taken in June after a 1.75" rain event over a 3-day period.





## Notes:

pH-GRAB = pH value from a grab sample.

"Magex" refers to the magnitude of exceedence indicator described in the Consolidated Assessment and Listing Methodology.

"Current" Line for 2016 – Per the methodology outlined in the CALM, all data from this referenced data is considered "current" unless. Available older data is provided for context. See the 2016 CALM for additional details.

## Invasive Aquatic Algae

### NINE WATERBODIES

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
Multiple (see below)	Multiple (see below)	Invasive Aquatic Algae	Multiple (see below)	4C-M	3-PNS

2016: Exotic algae are non-native, fast growing aquatic plants, which can quickly dominate and choke out native flora and fauna in the surface water. *Didymosphenia geminata* (also known as "Didymo" or "rock snot") is an example of one possible exotic algae. Such infestations would be in violation of Env-Wq 1703.19, which states that surface waters shall support and maintain a balanced, integrated and adaptive community of organisms having a species composition, diversity and functional organization comparable to that of similar natural habitats of a region. New research indicates that Didymo is in fact likely a native species that under certain conditions may result in what we consider a bloom. In the 2008 assessment cycle,

the following waterbodies were considered impaired, but not needing a TMDL since a load cannot be assigned. For the purposes of assessment, this waterbody has been identified as having bloom which may result in not meeting the biological integrity criteria due to the exotic macroalgae - didymo.

2016 Name	Primary Town	WATERBODY ID
HALLS STREAM	PITTSBURG	NHRIV801010303-02
CONNECTICUT RIVER	STEWARTSTOWN	NHRIV801010305-02
MOHAWK RIVER - UNNAMED BROOK - WEST BRANCH MOHAWK RIVER - ROARING BROOK	COLEBROOK	NHRIV801010401-04-02
SIMMS STREAM - UNNAMED BROOK - WEST BRANCH SIMMS STREAM	COLUMBIA	NHRIV801010403-02
CONNECTICUT RIVER	COLUMBIA	NHRIV801010404-02
CONNECTICUT RIVER	COLUMBIA	NHRIV801010405-03
CONNECTICUT RIVER	STRATFORD	NHRIV801010603-05
CONNECTICUT RIVER	NORTHUMBERLAND	NHRIV801010902-02
CONNECTICUT RIVER	CHARLESTOWN	NHRIV801060702-12

### Non-Native Aquatic Plants

Exotic macrophytes are non-native, fast-growing aquatic plants, which can quickly dominate and choke out native aquatic plant growth in the surface water. Examples of exotic macrophytes include variable milfoil (*Myriophyllum heterophyllum*), Eurasian milfoil (*Myriophyllum spicatum*), fanwort (*Cabomba caroliniana*) and water chestnut (*Trapa natans*). Such infestations are in violation of Env-Wq 1703.19, which states that surface waters shall support and maintain a balanced, integrated and adaptive community of organisms having a species composition, diversity and functional organization comparable to that of similar natural habitats of a region.

Assessment Category 4C represents cases where a waterbody is impaired or threatened for one or more designated uses but does not require the development of a TMDL because the impairment is not caused by a pollutant.

#### **PEMIGEWASSET LAKE (NHLAK700010801-01)**

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
PEMIGEWASSET LAKE	NHLAK700010801-01	Non-Native Aquatic Plants		4C-M	2-M

2016: Pemigewasset Lake (NHLAK700010801-01) was documented as impaired in 2006 for non-native aquatic plants for the aquatic life designated use. Infestation by Variable milfoil is currently at a low density/coverage. As of April 2014 control actions include; Herbicide treatment and diver hand removal. Surveys in 2015 and 2016 by NHDES biologists yielded no finds of variable milfoil. Assumed eradicated and will receive ongoing surveillance.

### Shellfishing

#### **WITCH CREEK (NHEST600031002-01-01)**

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
WITCH CREEK	NHEST600031002-01-01	FECAL COLIFORM	RYE	4A-P	3-PNS

The NHDES Shellfish Program is responsible for implementing the National Shellfish Sanitation Program (NSSP) and for determining NSSP classifications. As described in the CALM, the Shellfishing designated use is assessed based on the classifications assigned by the NHDES Shellfish Program. In the 2014 assessment

cycle this assessment unit (i.e. shellfishing zone) was classified as “RESTRICTED, CLOSED,” or in 305(b)/303(d) terms, Impaired and needing a TMDL (5-P). On January 1, 2015, the classification of this assessment unit (i.e. shellfishing zone) was re-classified to “PROHIBITED, SAFETY ZONE,” or in 305(b)/303(d) terms, Insufficient information (3-PNS). In this case, the shellfish area is closed for administrative reasons such as lack of a current sanitary survey or a safety management zone around wastewater treatment plants or marinas.

#### UPPER SAGAMORE CREEK (NHEST600031001-03)

Assessment Unit Name	Assessment Unit ID	Parameter Name	Primary Town	2014	2016
UPPER SAGAMORE CREEK	NHEST600031001-03	FECAL COLIFORM	PORTSMOUTH	4A-P	3-PNS

The NHDES Shellfish Program is responsible for implementing the National Shellfish Sanitation Program (NSSP) and for determining NSSP classifications. As described in the CALM, the Shellfishing designated used is assessed based on the classifications assigned by the NHDES Shellfish Program. In the 2014 assessment cycle this assessment unit (i.e. shellfishing zone) was classified as “PROHIBITED, CLOSED,” or in 305(b)/303(d) terms, Impaired and needing a TMDL (5-P). On January 1, 2015, the classification of this assessment unit (i.e. shellfishing zone) was re-classified to “PROHIBITED, SAFETY ZONE,” or in 305(b)/303(d) terms, Insufficient information (3-PNS). In this case, the shellfish area is closed for administrative reasons such as lack of a current sanitary survey or a safety management zone around wastewater treatment plants or marinas.